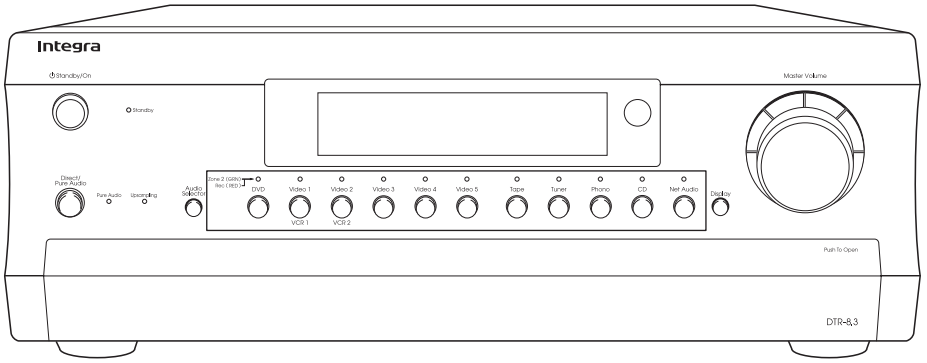
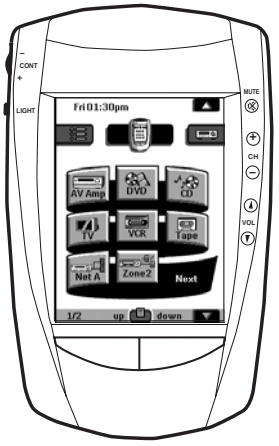
Ref. No. 3759
Dec., 2002

Integra SERVICE MANUAL

AV RECEIVER
MODEL DTR-8.3





Black model

BUDD	120V AC, 60Hz
BUPA	230~240V AC, 50Hz

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

SPECIFICATIONS

AMPLIFIER SECTION

Continuous average power output (FTC)

All channels:	**110 W per channel min. RMS at 8 Ω, 2 channels driven from 20 Hz to 20 kHz with no more than 0.08% total harmonic distortion.** **145 W min. RMS at 6 Ω, 2 channels driven from 1 kHz with no more than 0.1% total harmonic distortion.**
Continuous power output (DIN)	150 W at 6 Ω
Maximum power output (EIAJ)	180 W at 6 Ω
Dynamic power output (stereo)	2×280 W at 3 Ω 2×220 W at 4 Ω 2×140 W at 8 Ω
Total Harmonic Distortion:	0.08% at rated power 0.08% at 1 W output
IM Distortion:	0.08% at rated power 0.08% at 1 W output
Damping factor:	60 at 8 Ω
Input sensitivity and impedance	
PHONO:	2.5 mV, 50 kΩ
LINE (CD, TAPE, DVD, VIDEO 1-5):	200 mV, 50 kΩ
MULTICHANNEL INPUT (FRONT L/C/R, SURROUND L/R, SURROUND BACK L/R):	200 mV, 50 kΩ
(SUBWOOFER):	36 mV, 50 kΩ
COAXIAL 1, 2, 3 (DIGITAL):	0.5 Vp-p, 75Ω
DVD, VIDEO 1, 2, 3, 4, 5:	1 Vp-p, 75Ω 1 Vp-p, 75Ω (Y) 0.28 Vp-p, 75Ω (C)
COMPONENT VIDEO 1, 2:	1 Vp-p, 75Ω (Y) 0.7 Vp-p, 75Ω (P_B, P_R)
Output level and impedance	
Rec out (TAPE, VIDEO 1, 2):	200 mV, 470Ω
Pre out:	1 V, 470Ω
ZONE 2 OUT:	100 mV, 470Ω
VIDEO (VIDEO 1, 2, MONITOR OUT, ZONE 2 OUT):	1 Vp-p, 75Ω
S-VIDEO (VIDEO 1, 2, MONITOR OUT):	1 Vp-p, 75Ω (Y) 0.28 p-p, 75Ω (C)
COMPONENT VIDEO OUT:	1 Vp-p, 75Ω (Y) 0.7 Vp-p, 75Ω (P_B, P_R)
Phono overload:	120 mV RMS at 1 kHz, 0.5% T.H.D.
Frequency response:	10 Hz to 100 kHz : +1/–3 dB (CD in Direct mode)
RIAA deviation:	20 Hz to 20 kHz : ±0.8 dB
Tone Control	
Bass:	±10 dB at 50 Hz
Treble:	±10 dB at 20,000 Hz
Signal-to-noise ratio (direct)	
Phono:	80 dB (IHF A, 5 mV input)
CD/Tape:	110 dB (IHF A, 0.5 V input)

TUNER SECTION

FM

Tuning range	
USA & Canadian models:	87.50–108.00 MHz (100-kHz steps)
Other models:	87.50–108.00 MHz (50-kHz steps)
Usable sensitivity	
Mono:	11.2 dBf, 1.0 µV (75Ω IHF) 0.9 µV (75Ω DIN)
Stereo:	17.2 dBf, 2.0 µV (75Ω IHF) 23 µV (75Ω DIN)
50 dB quieting sensitivity	
Mono:	17.2 dBf, 2.0 µV (75Ω)
Stereo:	37.2 dBf, 20 µV (75Ω)
Capture ratio:	2.0 dB
IF rejection ratio:	90 dB
Signal-to-noise ratio	
Mono:	76 dB
Stereo:	70 dB
Alternate channel attenuation:	55 dB
Selectivity:	50 dB (DIN)
AM suppression ratio:	50 dB
Total harmonic distortion	
Mono:	0.2%
Stereo:	0.3%
Frequency response:	30 Hz–15 kHz, ±1.0 dB
Stereo separation:	45 dB at 1 kHz 30 dB at 100 Hz – 10 kHz

AM

Tuning range	
USA & Canadian models:	530 to 1,710kHz (10kHz steps)
Australian models:	522 to 1,611 kHz (9-kHz steps)
Usable sensitivity:	30 µV
Image rejection ratio:	40 dB
IF rejection ratio:	40 dB
Signal-to-noise ratio:	40 dB
Total harmonic distortion:	0.7%

GENERAL

Power supply	
USA & Canadian models:	AC 120 V, 60 Hz
Australian models:	AC 230 –240 V, 50 Hz
Power consumption	
USA & Canadian models:	8.4 A
Australian models:	670 W
Dimensions (W×H×D):	435×175×460 mm 17-1/8"×6-7/8"×18-1/8"
Weight	18.2 kg (40.1 lbs)

REMOTE CONTROLLER

Model:

USA & Canadian models:	USR-5
Australian models:	USR-5RF
Hardware:	High-resolution (320 240) liquid crystal display (LCD) with contrast control Large touchscreen Seven programmable direct-access buttons Backlighting for LCD and direct-access buttons Infrared sending and learning eyes 3-wire (RS232) serial port connector
Software:	Dynamic, animated interface Editable macros (up to 255 commands per macro) Total number of devices and macros limited only by memory Database with RC codes to operate different brands
Infrared (IR):	Operating distance of 33 feet(10 meters) Learning frequency up to 56 kHz Learning distance 2 inch (5 cm) up to 1 foot (30 cm)
Memory:	2 MB non-volatile flash memory (retains commands when batteries are not present) 512 K SRAM
Batteries:	4 AA 1.5 V batteries, or one 4.8V rechargeable battery pack (USA and Canadian model)
Battery life:	Approximately 6 months with typical use
Power management:	Power on by tapping the touchscreen, power off automatically management
Dimensions:	6.0 inch 3.7 inch 1.7 inch (153.6 94.1 43.7 mm)
Operating temperature:	32 ˚F to 122 ˚F (0 ˚C to 50 ˚C)

(USA & Canadian models only)

Radio frequency (RF):	Operating distance of approximately 66 feet (20 meters) depending on the surrounding conditions Band: 418 MHz Bandwidth: +/–100 kHz 16 Extender ID's and 4 Channels
Accessories (Not included):	Remote controller recharge package BCC-5 RF Receiver RFR-5

Database information:
Designed by UEI Technology
Licensed under U.S. Patent 5,689,353
Portions UEI 1999

Specifications and features are subject to change without notice.

SERVICE PROCEDURES

1. Replacing the fuses

This symbol located near the fuses indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating refer to the marking adjacent to the symbol.

Ce symbole indique que le fusible utlise est a rapide. Pour une protection permanente, n'untiliser que fusibles de meme type. Ce darnier est la qu le present symbol est appse.

CIRCUIT NO.	PART NO.	DESCRIPTION
F6901,F6902	252100	10A-EAK, Fuse <A>
	252196	12A-UL/T-314, Fuse <D>
F901	252196	12A-UL/T-314, Fuse <D>
F902	252078,	5A-SE-EAK,
	252244 or	5A-SE-TL250V or
	252278	5A-SE-TL250V, Fuse <A>
F903	252075,	2.5A-SE-EAK,
	252241 or	2.5A-SE-TL250V or
	252275	2.5A-SE-TL250V, Fuse <A>
F9501,F9502	252160 or	2.5A-UL/T-237 or
	252254	2.5A-T/UL-ST2, Fuse <D>
	252075,	2.5A-SE-EAK,
	252241 or	2.5A-SE-TL250V or
	252275	2.5A-SE-TL250V, Fuse <A>

Note:
<D>: 120V model only
<A>: Australian model model

2. To initialize the unit

This device employs a microprocessor to perform various functions and operations. If interference generated by an external power supply, radio wave, or other electrical source results in accident which causes the specified operations and functions to operate abnormally.
To perform a result, please follow the procedure below.

1.Press the STANDBY ON button to turn on the unit.
2.Press and hold down the VIDEO 1 button, then press the STANDBY/ON button.
3.After "CLEAR" is displayed, the preset memory and each mode stored in the memory, such as surround, are initialized and will return to the factory setting.
4.Unplug the power supply cord.

3. Safety-check out

(Only U.S.A. model)
After correcting the original service problem, perform the following safety check before releasing the set to the customer. Connect the insulating-resistance tester between the plug of power supply cord and screw on the back panel. Specifications: 3.3Mohm+/-10% at 500V.

4. Memory Preservation

This unit does not require memory preservation batteries. A built-in memory power back-up system preserves the contents of the memory during power failures and even when the unit is unplugged.The unit must be plugged in order to charge the back-up system.
The memory preservation period after the unit has been unplugged varies depending on climate and placement of the unit. On the average, memory contents are protected over a period of a few weeks after the last time the unit has been unplugged.This period is shorter when the unit is exposed to a highly humid climate.

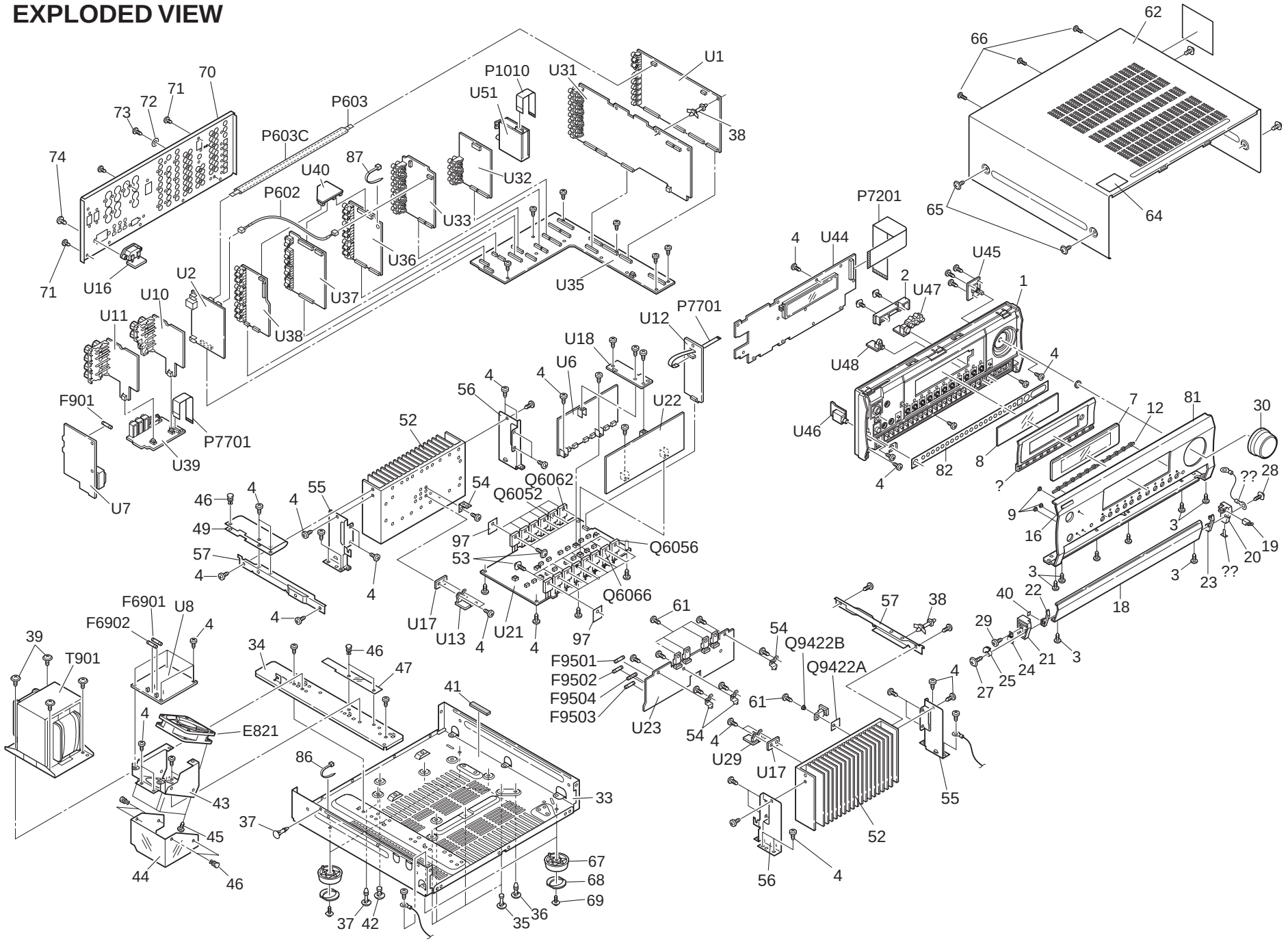
5. To confirm the version of microprocessor

1.Press the STANDBY ON button to turn on the unit.
2.Press and hold down the DISPLAY button after more than 15 sec., then press the STANDBY/ON button.
3.After the versions of main,sub and net microprocessors are displayed on FL tube, the unit returns to the original position.

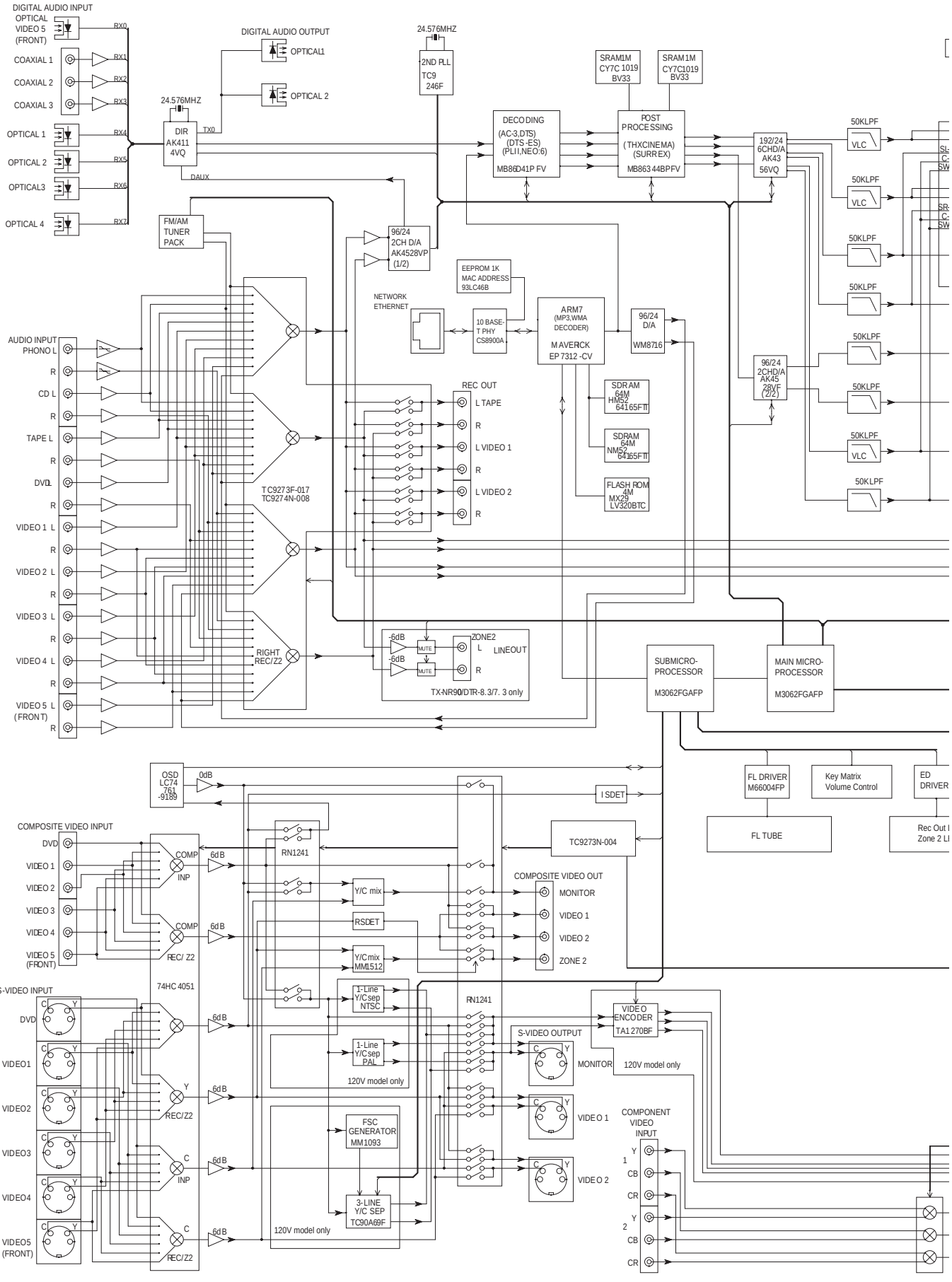
A	B	C	D	E

1
2
3
4

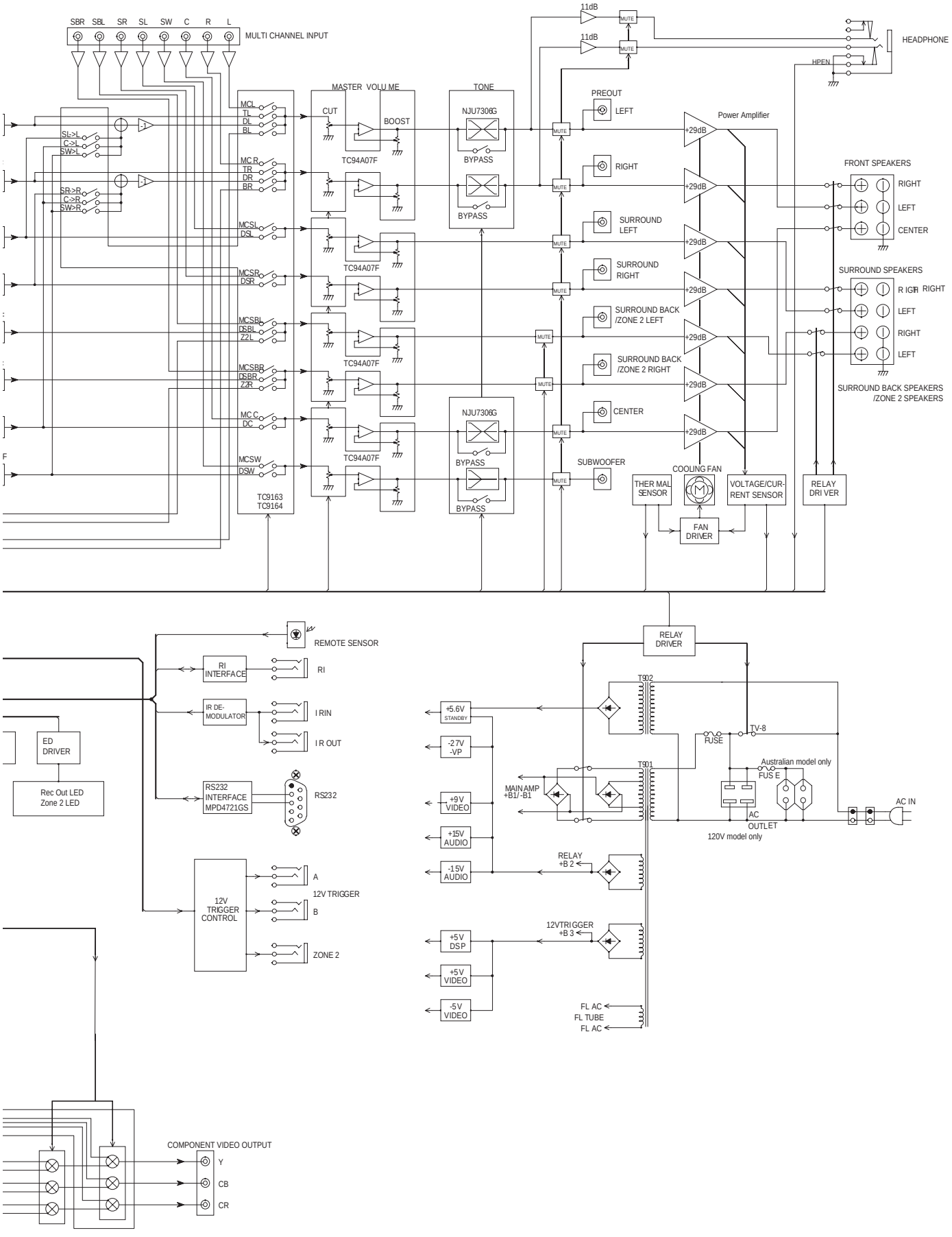
EXPLODED VIEW



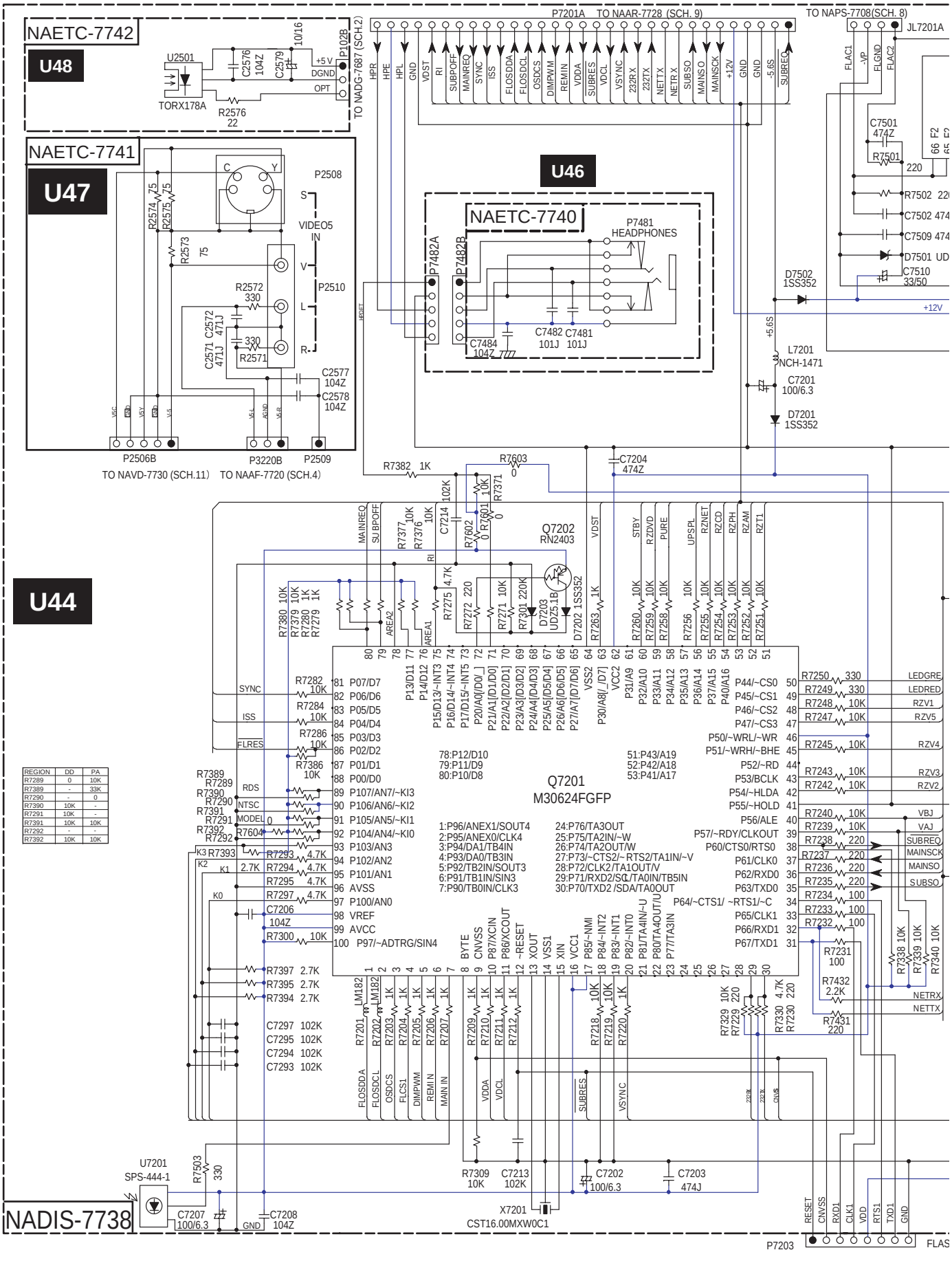
BLOCK DIAGRAM 1



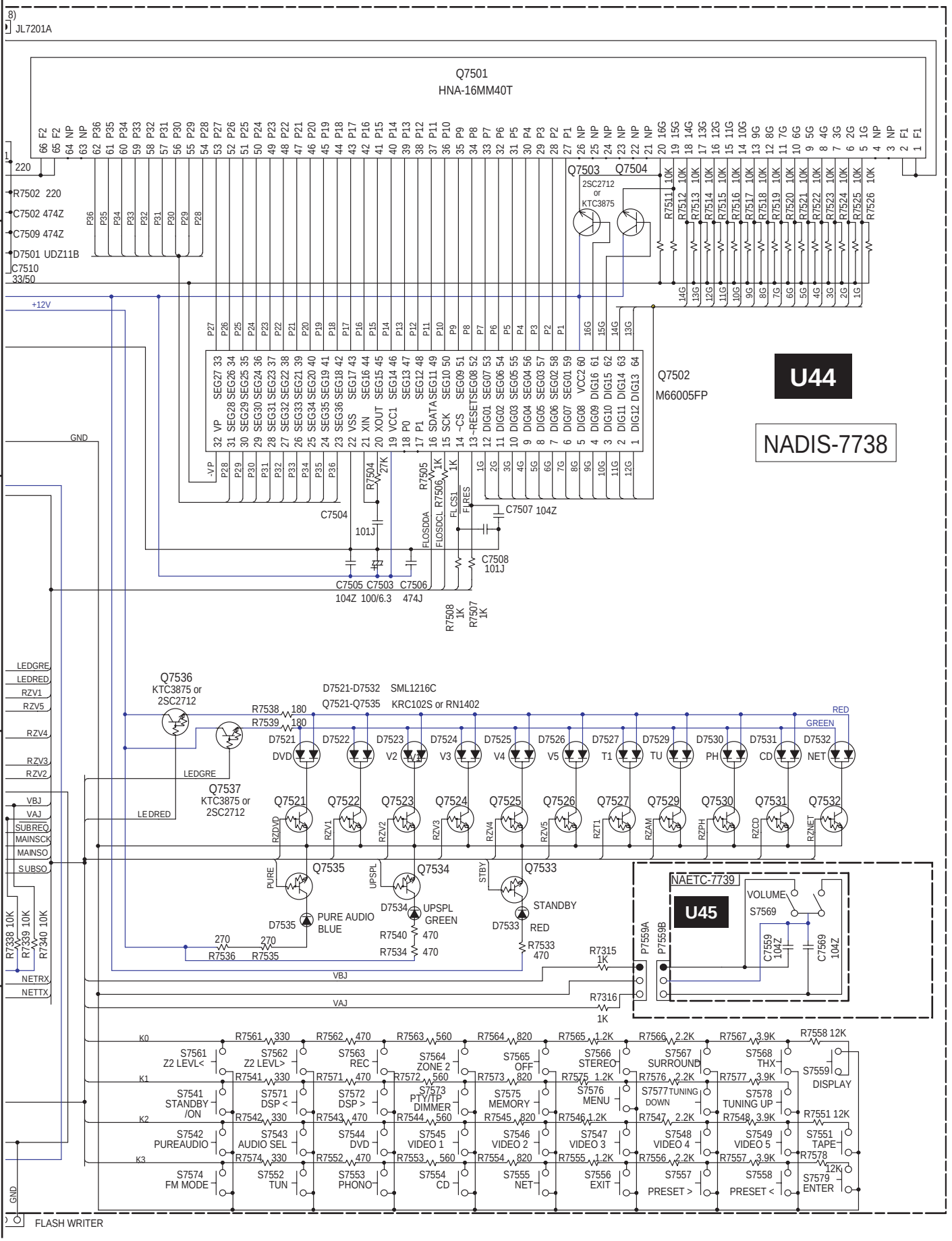
BLOCK DIAGRAM 2



SCHEMATIC DIAGRAM 1 Sub-microprocessor and display sections



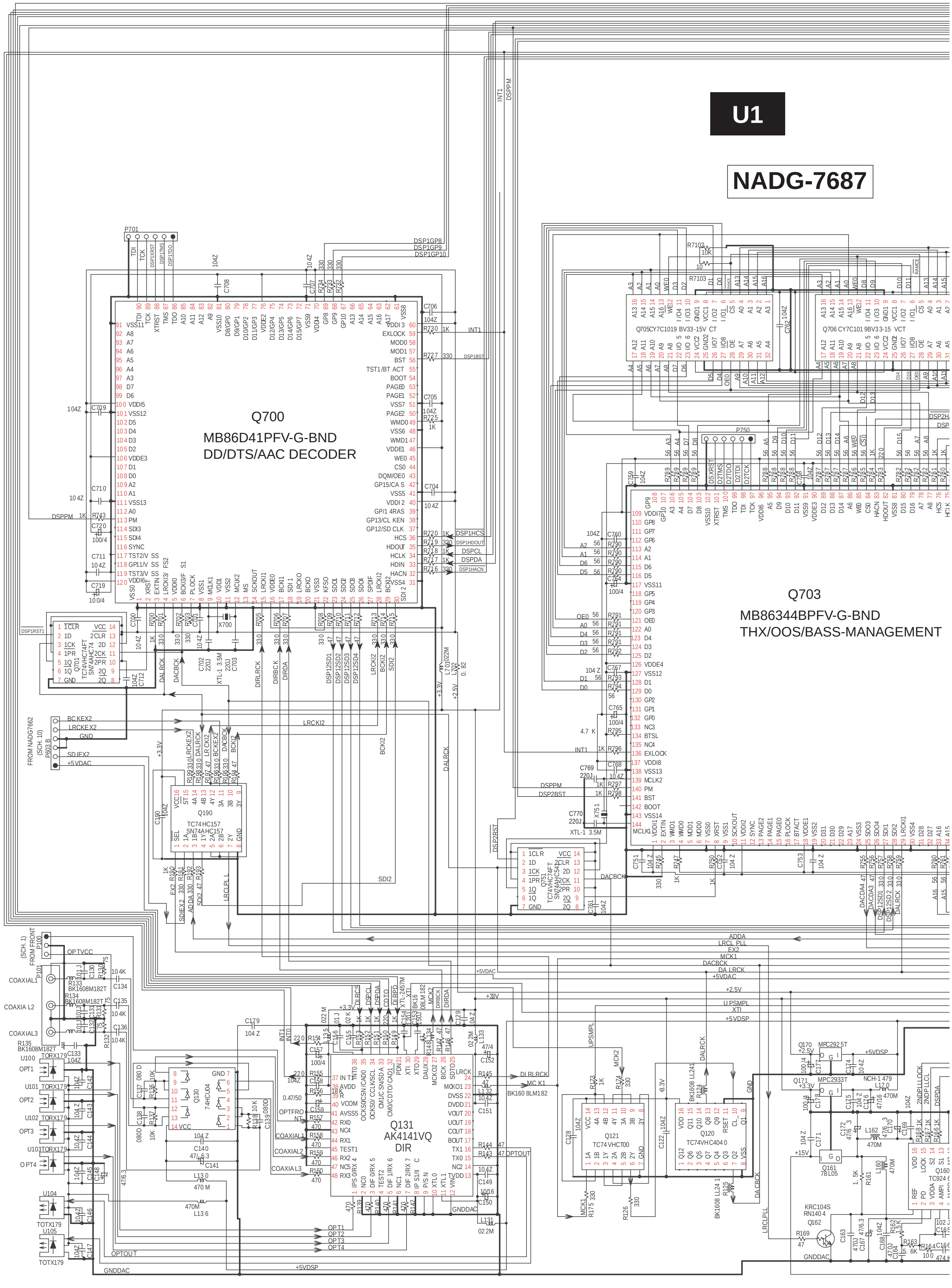
SCHEMATIC DIAGRAM 1-2 Sub-microprocessor and display sections



A B C D

SCHEMATIC DIAGRAM 2-1 DSP and Main Microprocessor Section

1 2 3 4 5


U1
NADG-7687
Q700
MB86D41PFV-G-BND
DD/DTS/AAC DECODER
Q703
MB86344BPFV-G-BND
THX/OOS/BASS-MANAGEMENT
Q705 CY7C1019 BV33-15V CT
Q706 CY7C1019BV33-15 VCT
Q131
AK4141VQ
DIR
Q130
74HCU04
Q190
TC74HC157
SN74AHC157
Q701
TC74VHC74FT
SN74AHC74
Q751
TC74VHC74FT
SN74AHC54
Q121
TC74VHCT00
Q120
TC74VHC4040
Q170 MPC2925T
Q171 MPC2933T
Q161
78L05
Q162
KRC104S
RN1404
Q160
TC924
P701
P750
FROM NADG7662
(SCH. 10)
P603 B
(SCH. 1)
FROM FRONT
P100
P101
COAXIAL1
COAXIA L2
COAXIAL3
U100 TORX179
U101 TORX179
U102 TORX179
U103 TORX179
U104 TOTX179
U105 TOTX179
OPT1
OPT2
OPT3
OPT4
OPTOUT
GNDDAC
+5VDSP
+5VDAC
ADDA
LRCL PLL
EX2
MCK1
DACBCK
DA LRCK
+2.5V
+3.3V
UPSMPL
XTI
DSP1GP8
DSP1GP9
DSP1GP10
DSPPM
DSP2BST
DSP2RST
INT1
XTL-1 3.5M

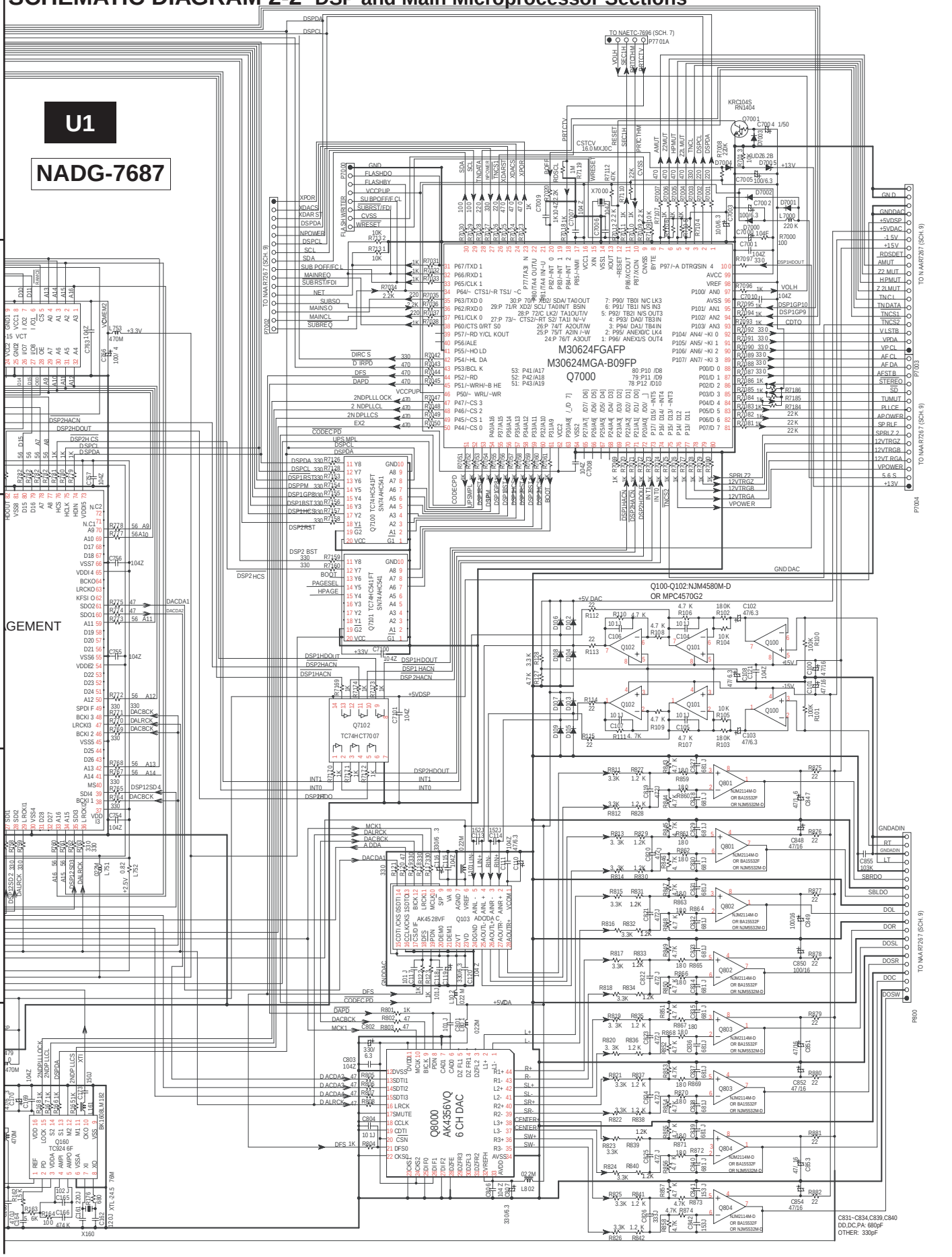
SCHEMATIC DIAGRAM 2-2 DSP and Main Microprocessor Sections

A B C D

1 2 3 4 5

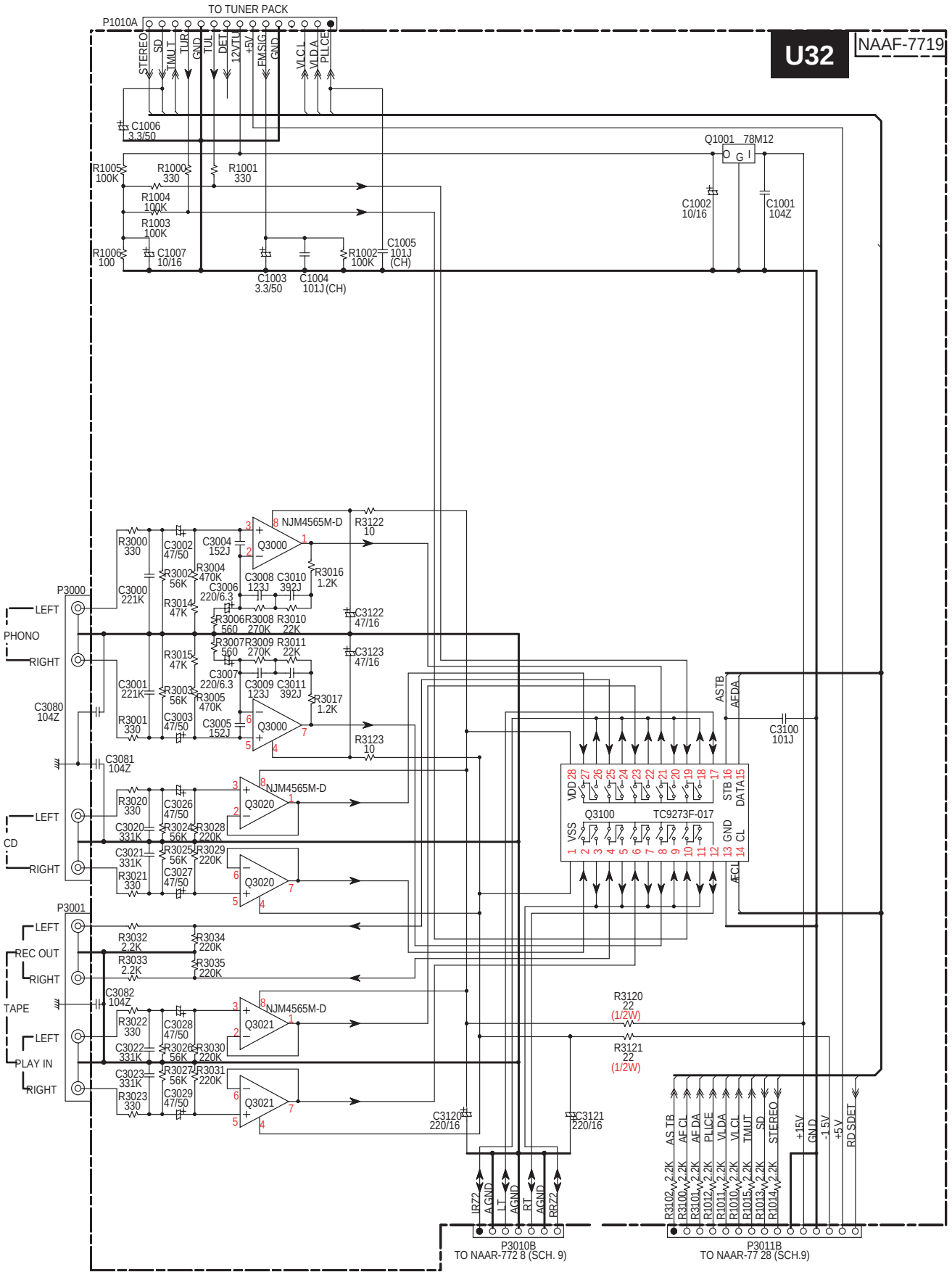
U1

NADG-7687



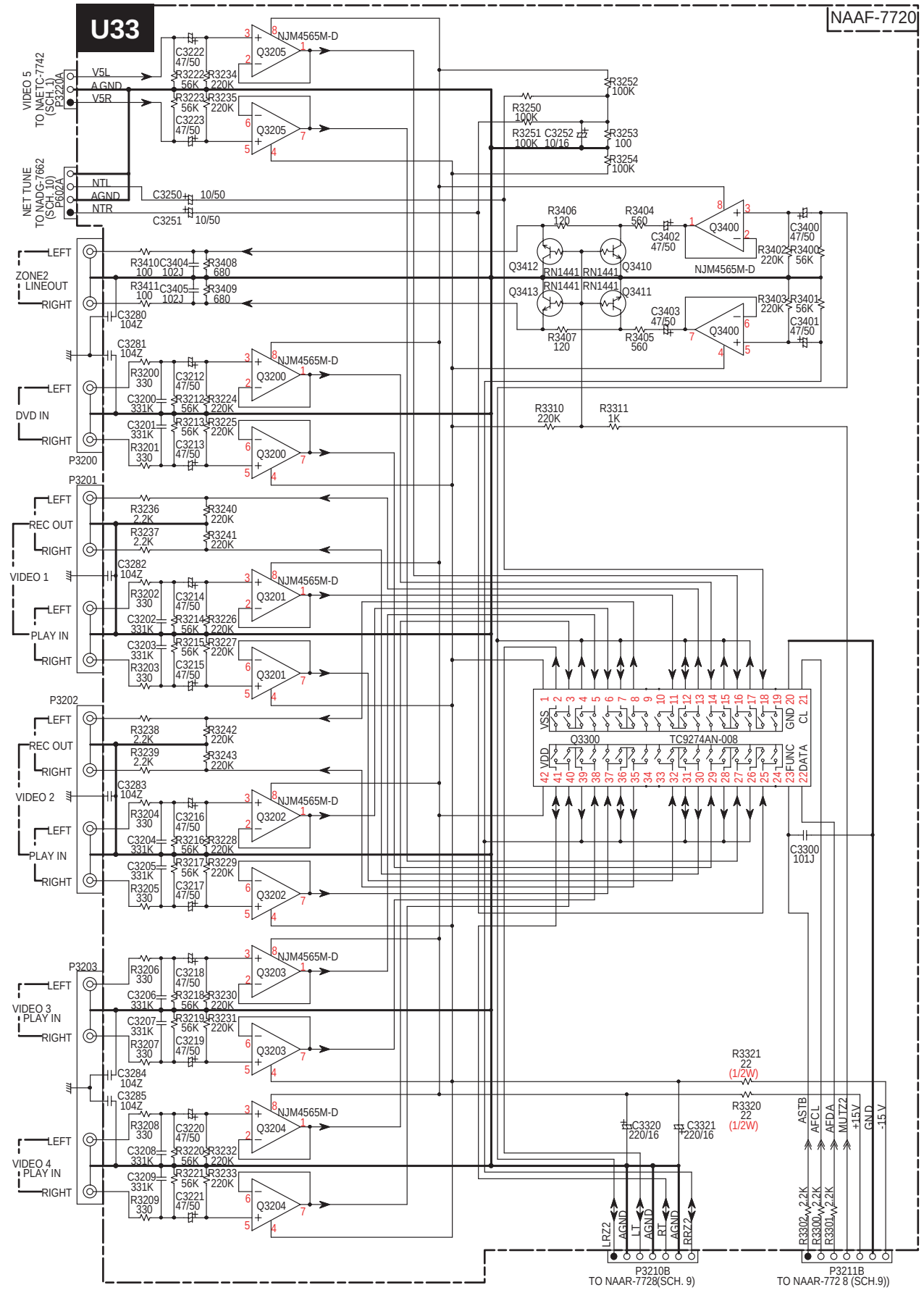
SCHEMATIC DIAGRAM 3-2

Audio Input/Output

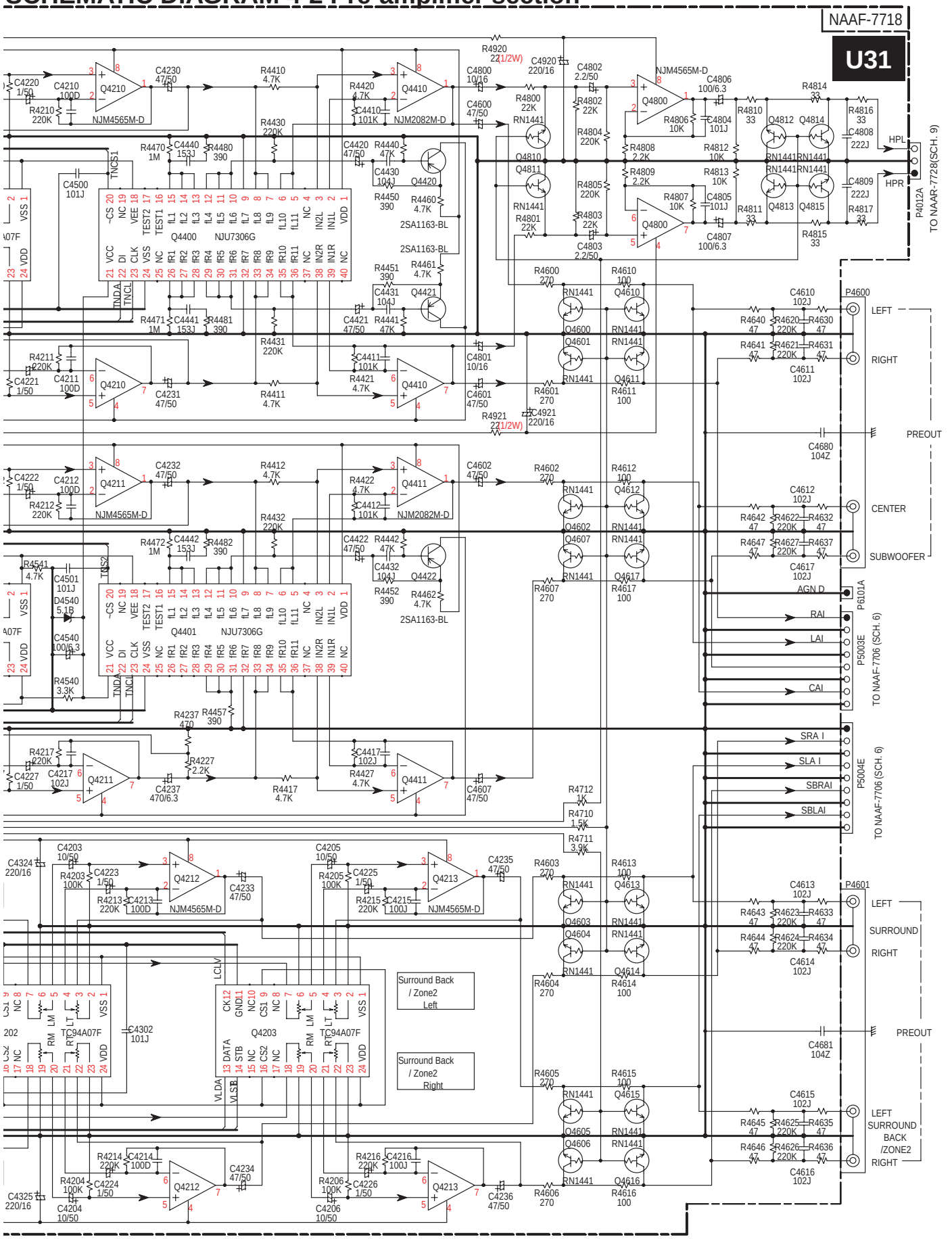


SCHEMATIC DIAGRAM 3-1

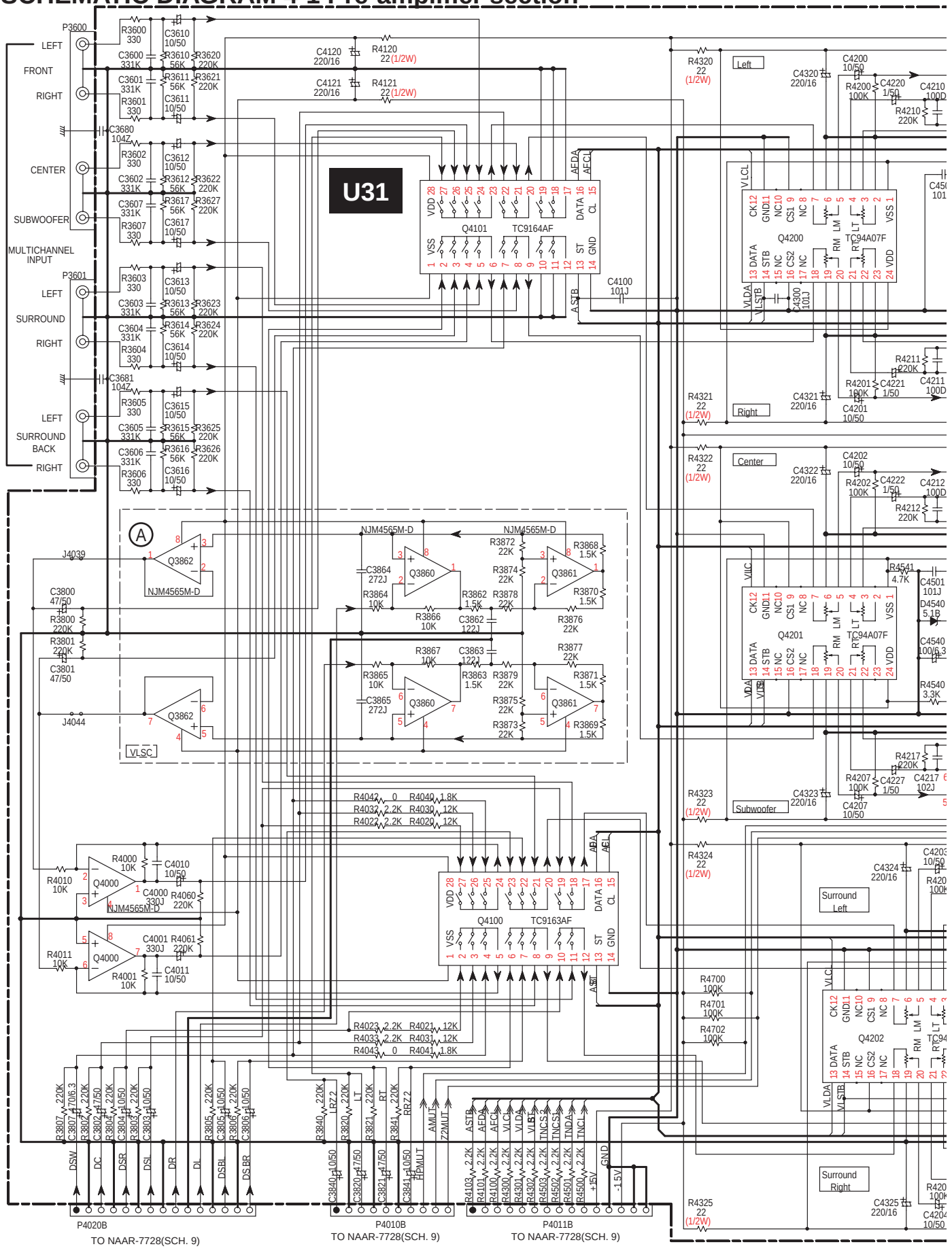
Audio Input/Output



SCHEMATIC DIAGRAM 4-2 Pre-amplifier section



SCHEMATIC DIAGRAM 4-1 Pre-amplifier section

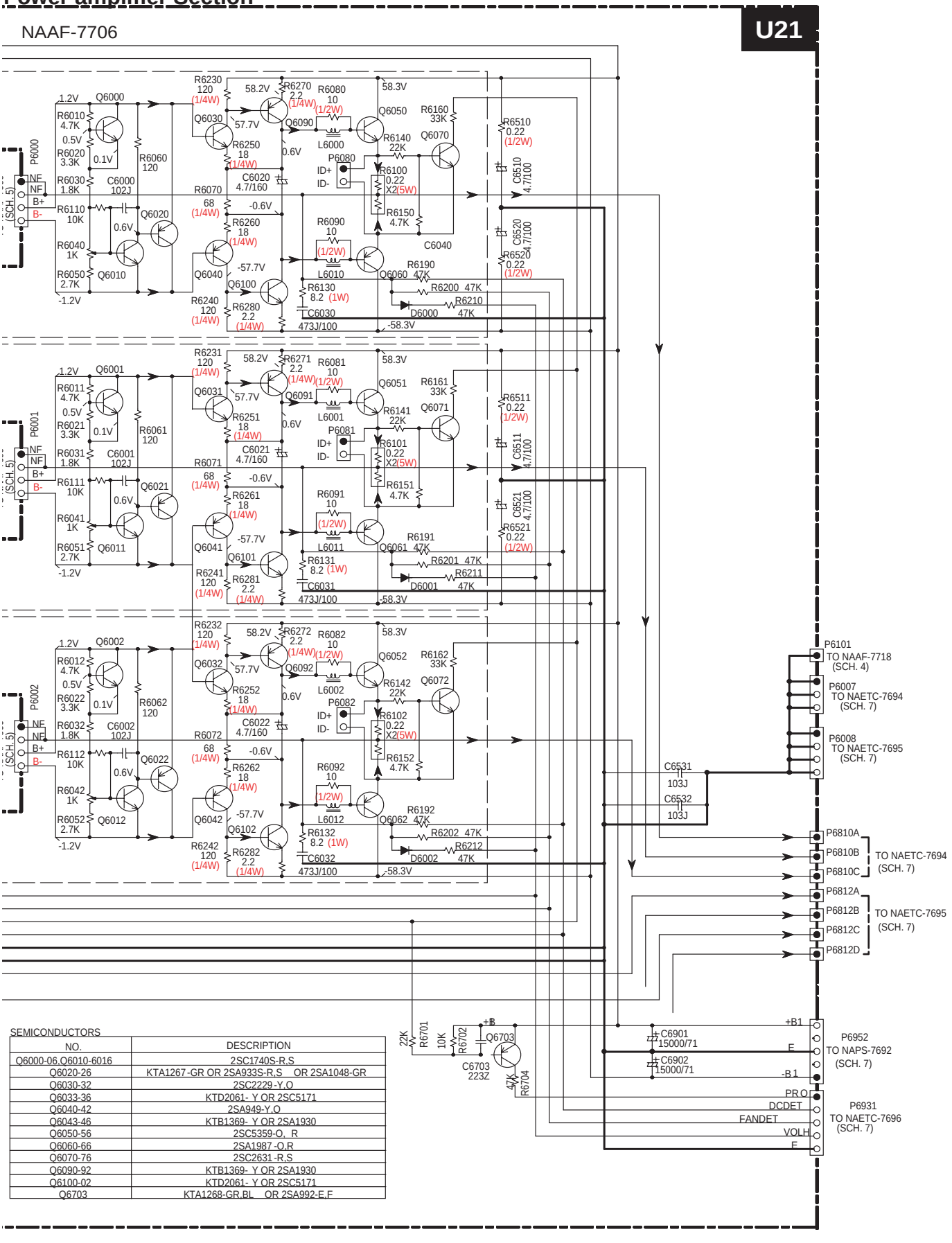


SCHEMATIC DIAGRAM 6-2

Power amplifier Section

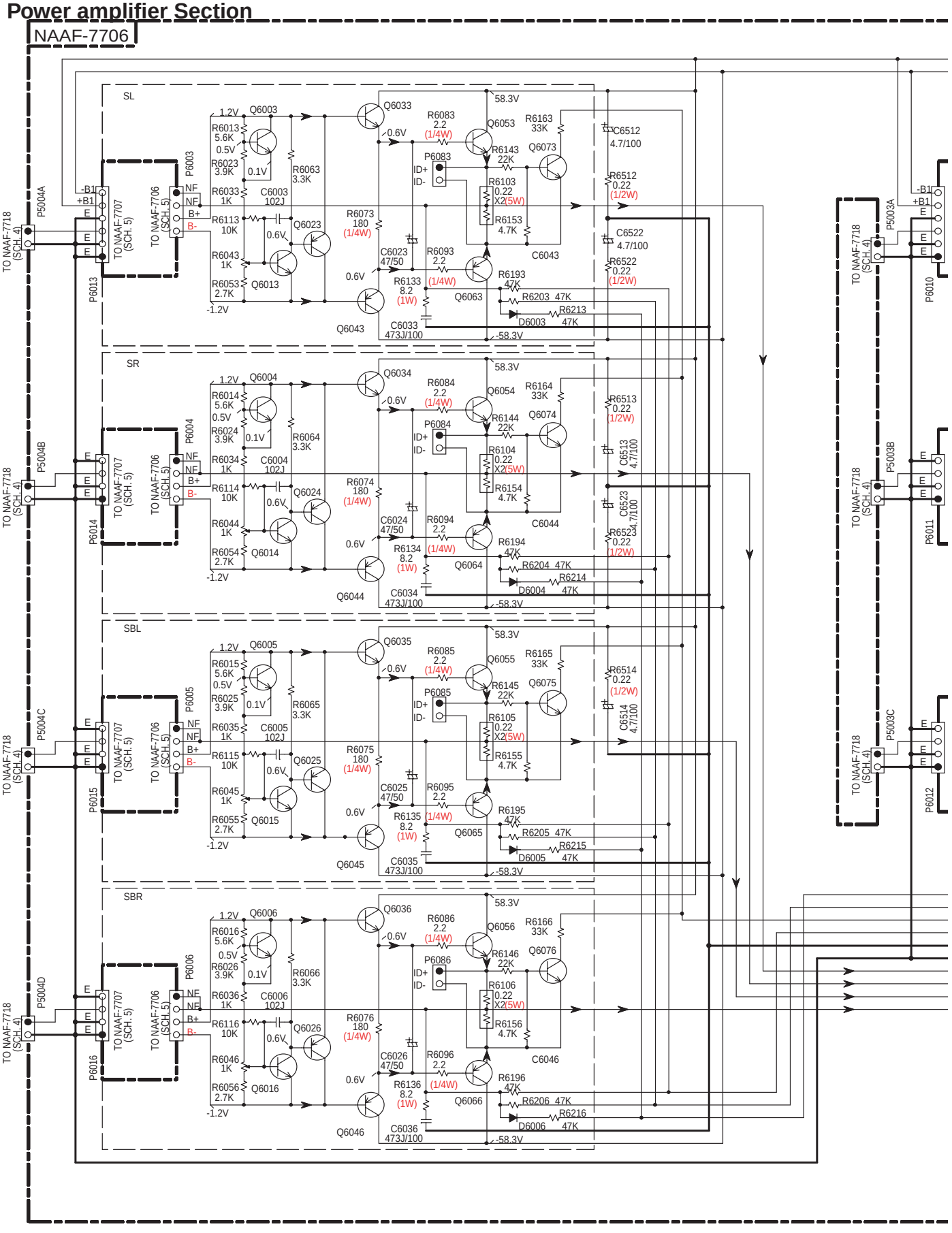
NAAF-7706

U21



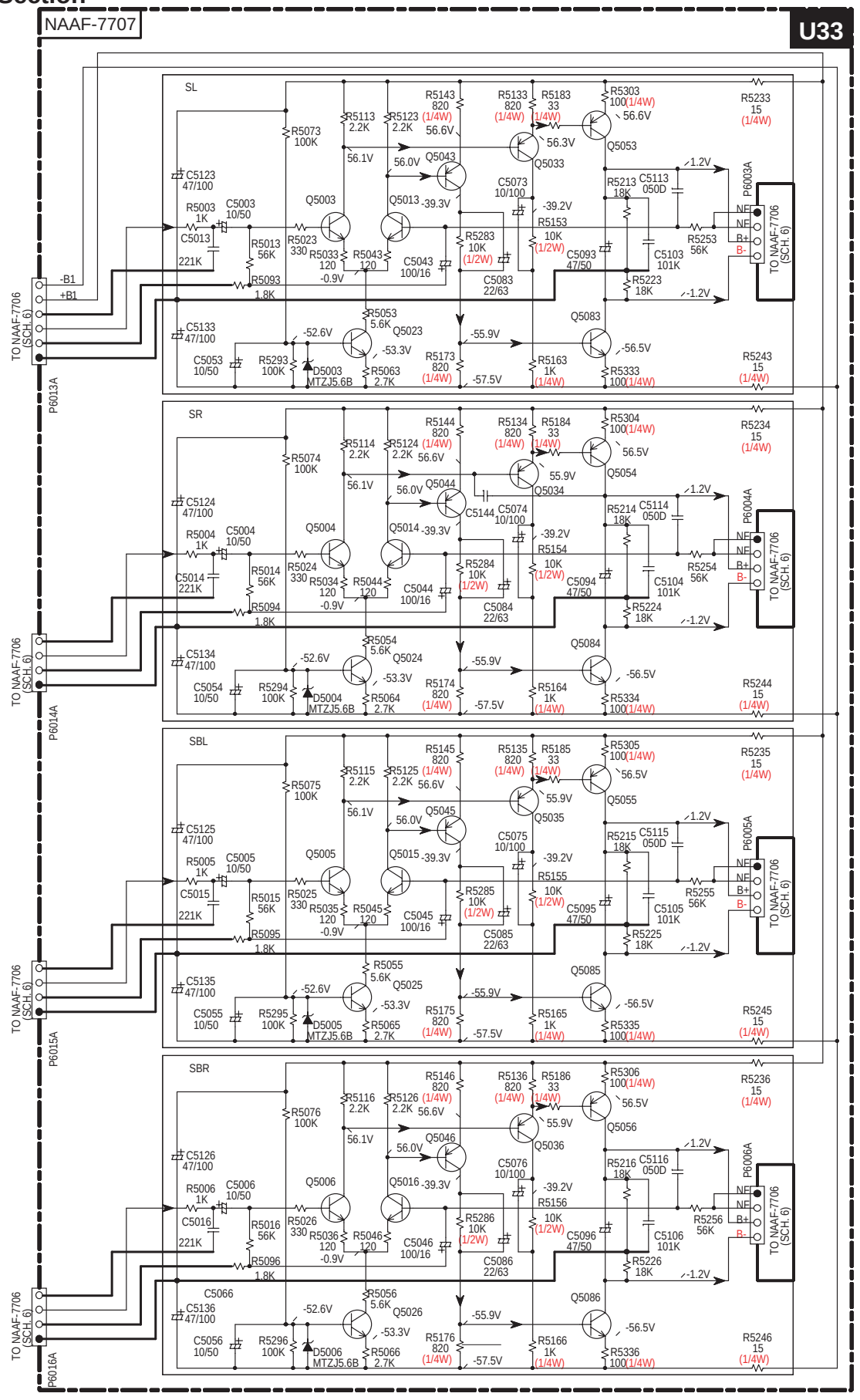
SCHEMATIC DIAGRAM 6-1

Power amplifier Section



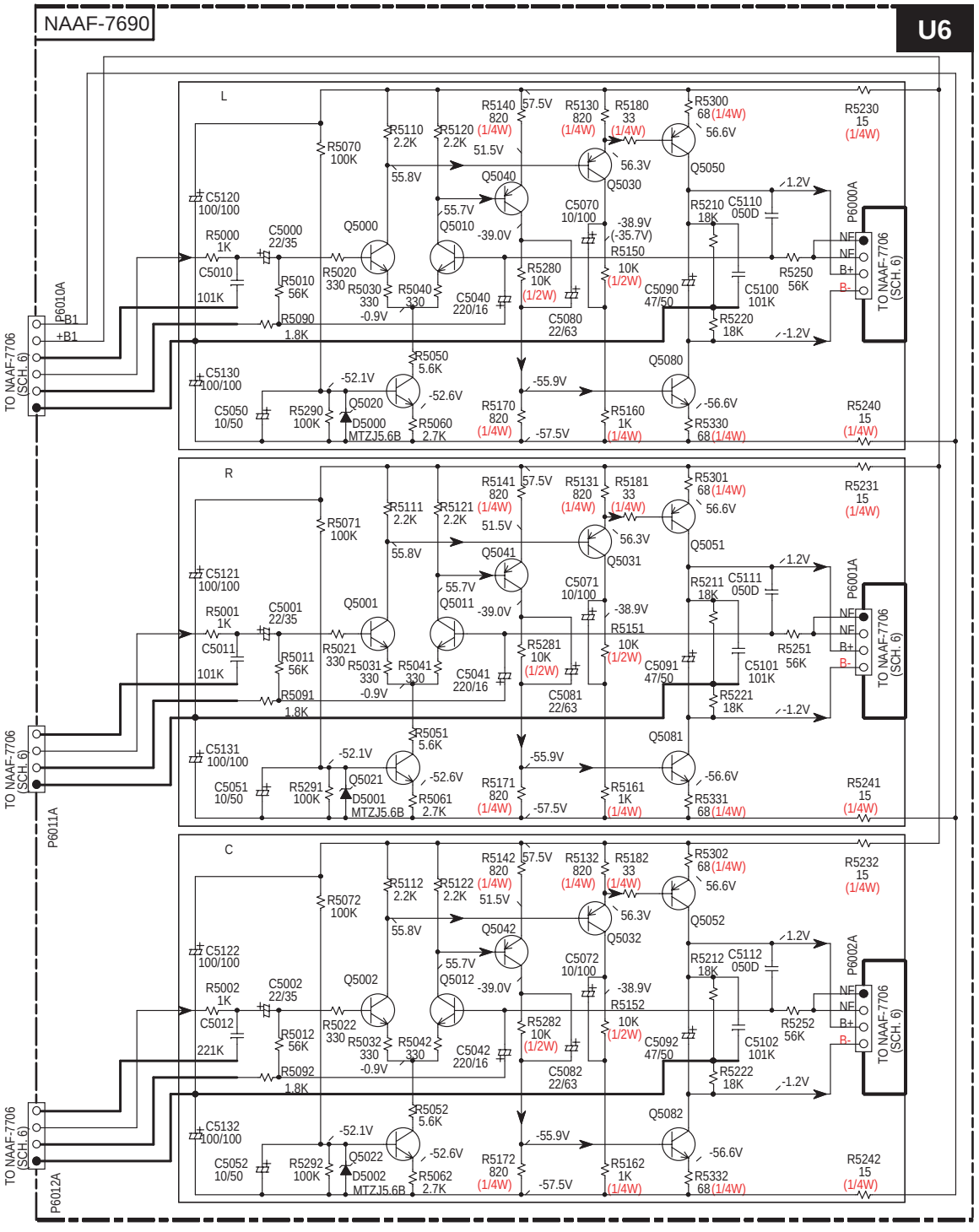
SCHEMATIC DIAGRAM 5-2

Driver Circuit Section



SCHEMATIC DIAGRAM 5-1

Driver Circuit Section



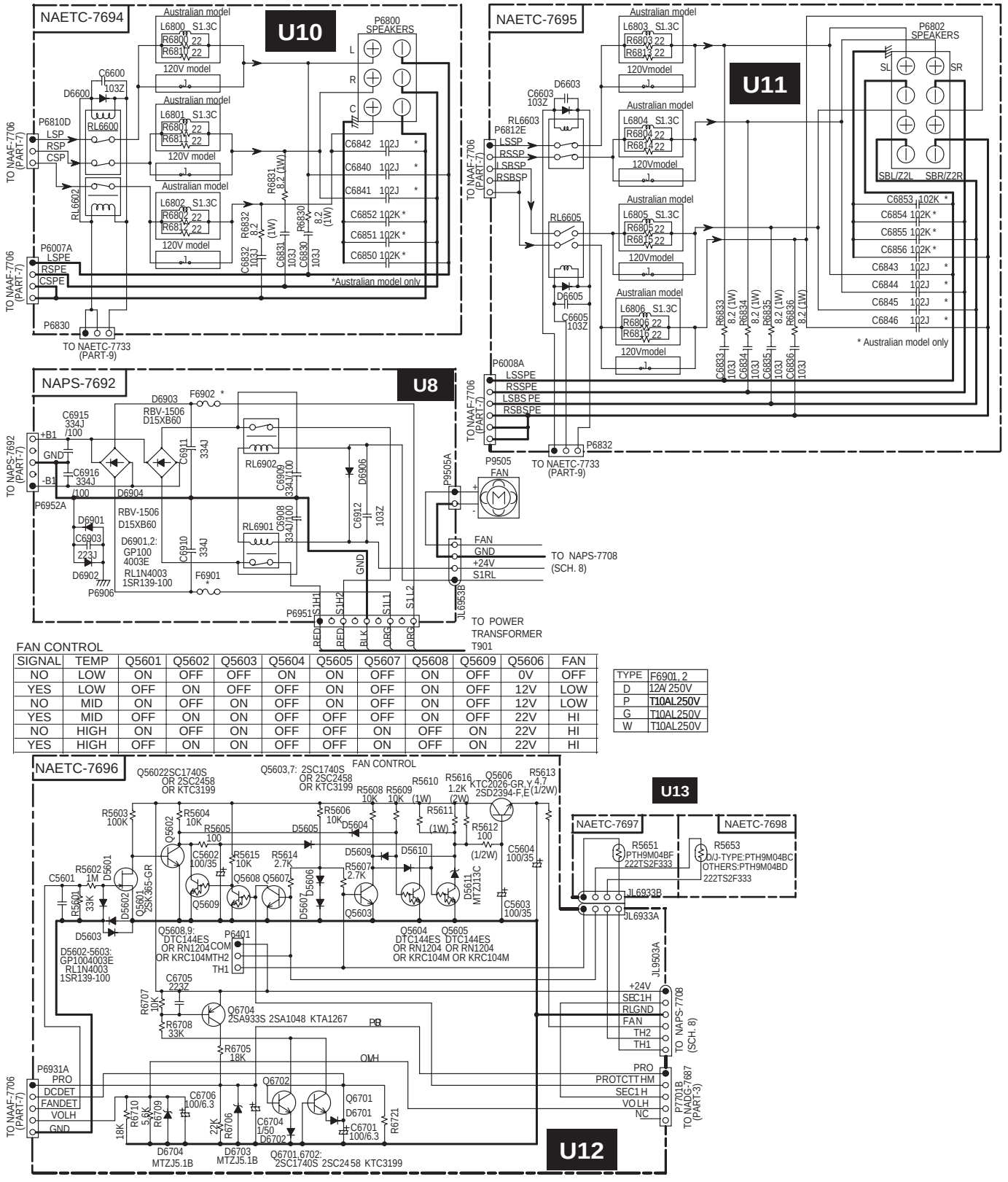
SEMICONDUCTORS

NO	
Q5000-06,Q5010-16	KTC3200-BL, 2SC1775A-E,F OR 2SC1845-E
Q5020-26	KTC3200-BL, 2SC1775A-E,F OR 2SC1845-E
Q5030-36,Q5040-46	KTA1024-Y,O OR 2SA949-Y,O
Q5050-52	2SA1360-Y,O
Q5053-56,Q5073-76	KTA1024-Y,O OR 2SA949-Y,O
Q5060-62	2SC3423-Y,O
Q5063-66,Q5080-83	KTC3206-Y,O OR 2SC2229Y,O

NOTE

THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR SAFETY.
REPLACE ON LY WITH PART NUMBER SPECIFIED.
VOLTAGE (MEASURED WITH VOLTMETER) IS DC VOLTAGE (NO INPUT SIGNAL)
ELECTROLYTIC CAPACITORS (⊣⊢) ARE IN uF/WV.
ALL CAPACITORS ARE IN pF/50WV UNLESS OTHERWISE NOTED.
EX) 030-3pF 330-33pF 331-330pF 333pF-0.033uF
ALL RESISTORS ARE IN OHMS 1/4WATTS UNLESS OTHERWISE NOTED.
THE THICK LINE ON PC BOARD ARE THE PRINTING SIDE OF THE PARTS.
EX) PRINTING SIDE
CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

SCHEMATIC DIAGRAM 7 Speaker terminal and fan drive sections



FAN CONTROL											
SIGNAL	TEMP	Q5601	Q5602	Q5603	Q5604	Q5605	Q5607	Q5608	Q5609	Q5606	FAN
NO	LOW	ON	OFF	OFF	ON	ON	OFF	ON	OFF	0V	OFF
YES	LOW	OFF	ON	OFF	OFF	ON	OFF	ON	OFF	12V	LOW
NO	MID	ON	OFF	ON	OFF	ON	OFF	ON	OFF	12V	LOW
YES	MID	OFF	ON	ON	OFF	OFF	OFF	ON	OFF	22V	HI
NO	HIGH	ON	OFF	ON	OFF	OFF	ON	OFF	ON	22V	HI
YES	HIGH	OFF	ON	ON	OFF	OFF	ON	OFF	ON	22V	HI

TYPE	F6901, 2
D	12A/ 250V
P	T10AL250V
G	T10AL250V
W	T10AL250V

A B C D

SCHEMATIC DIAGRM 8 Power Supply Section

THIS SYMBOL LOCATED NEAR THE FUSE INDICATES THAT THE FUSE USED IS SLOW OPERATING TYPE. FOR CONTINUED PROTECTION AGAINST FIRE FUSE HAZARD,REPLACE WITH SAME TYPE FUSE. FOR FUSE RATING REFER TO THE MAKING ADJACENT TO THE SYMBOL.

CE SYMBOLE INDIQUE QUE LE FUSIBLE UTLISE EST A LENT, E POUR UNE PROTECTION PERMANENTE,N'UTILISER QUE DES FUSIBLES DE MEME TYPE. CE DARNIER EST INDIQUE LA QU LE PRESENT SYMBOL EST APPOSE.

CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH FUSE OF SAME TYPE AND RATING INDICATED.

ATTENTIION
AFIN D'ASSURER UNE PROTECTION PERMANENTE CONTRE LES RISQUES D'INCENDIE, REMPLACER UNIQUEMENT PAR UN FUSIBLE DE MEME TYPE ET CALIBRATION COMME INDIQUE.

TYPE	AC
D	120V/60Hz
P	230-240V/50Hz

NAPS-7691 U7

U16 NAETC-7700

NPT-1456D NPT-1453D NPT-1453P

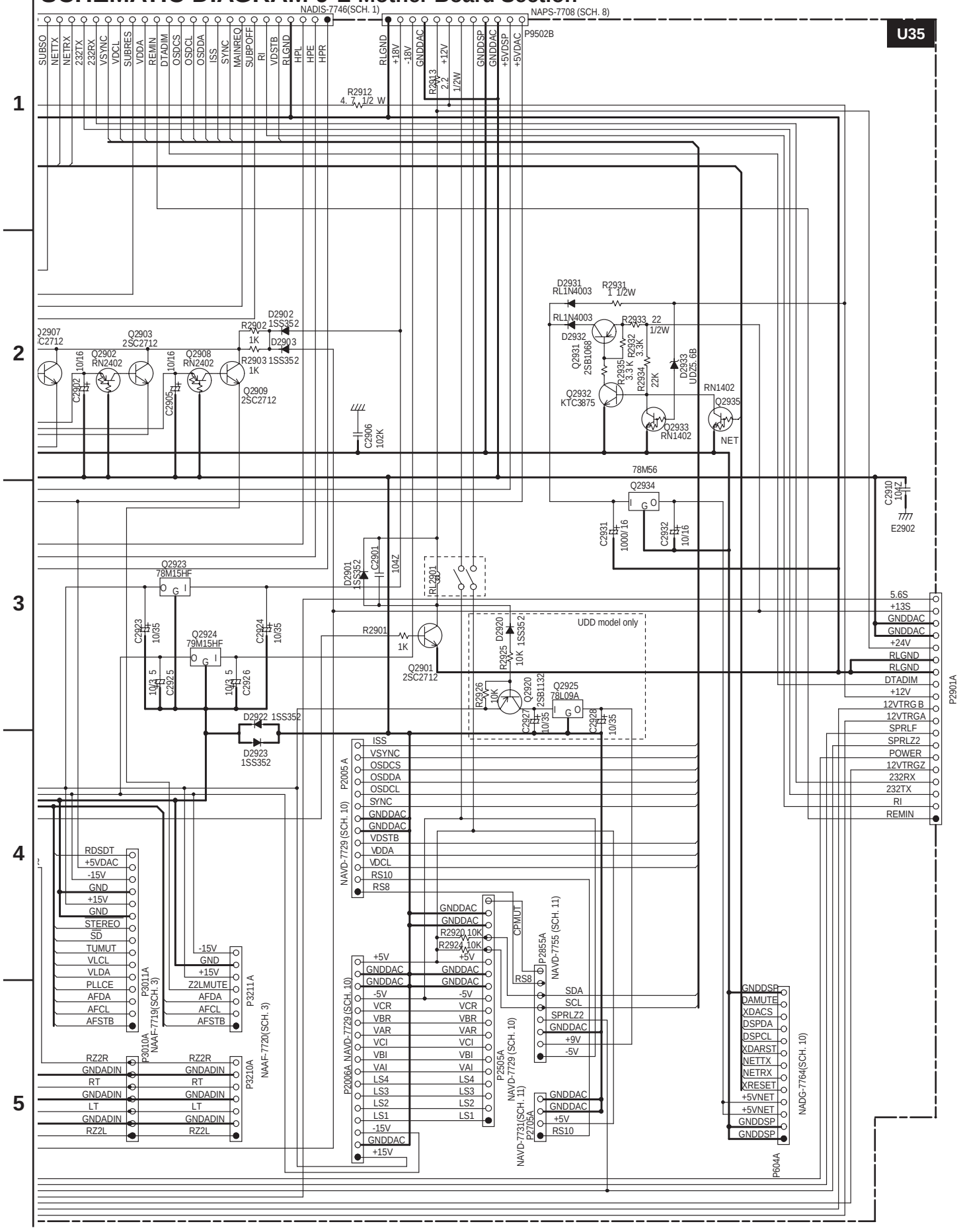
NAPS-7708

NAETC-7715 NAETC-7714 U29 U23

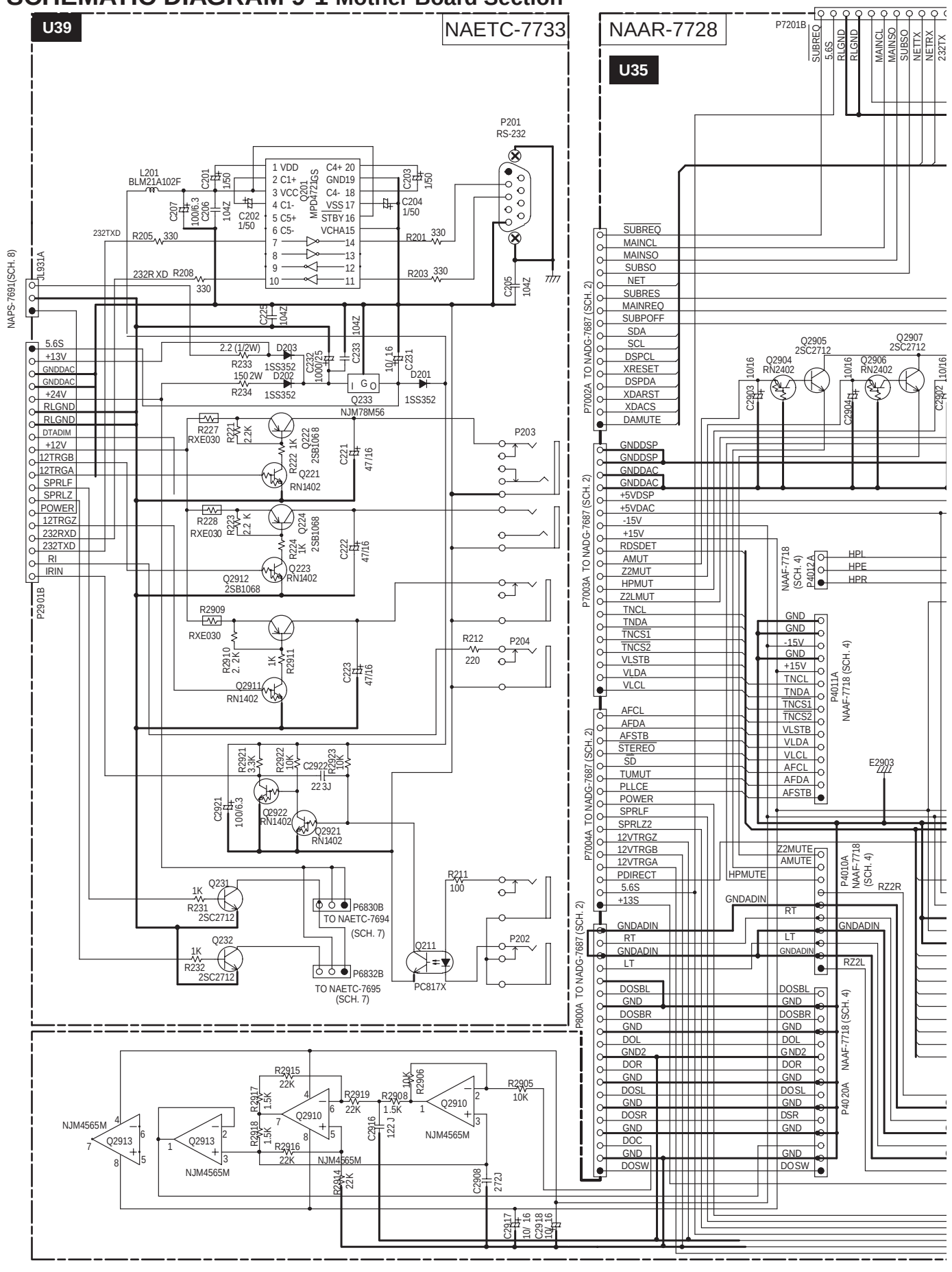
NAPS-7709 NAPS-7710 NAPS-7711 NAPS-7712 NAPS-7713

TO NAETC-7733 (SCH. 9)
TO NAPS-7692 P6951 (SCH. 7)
TO NADIS-7728 (SCH. 1)
TO NAAR-7728 (SCH. 9)

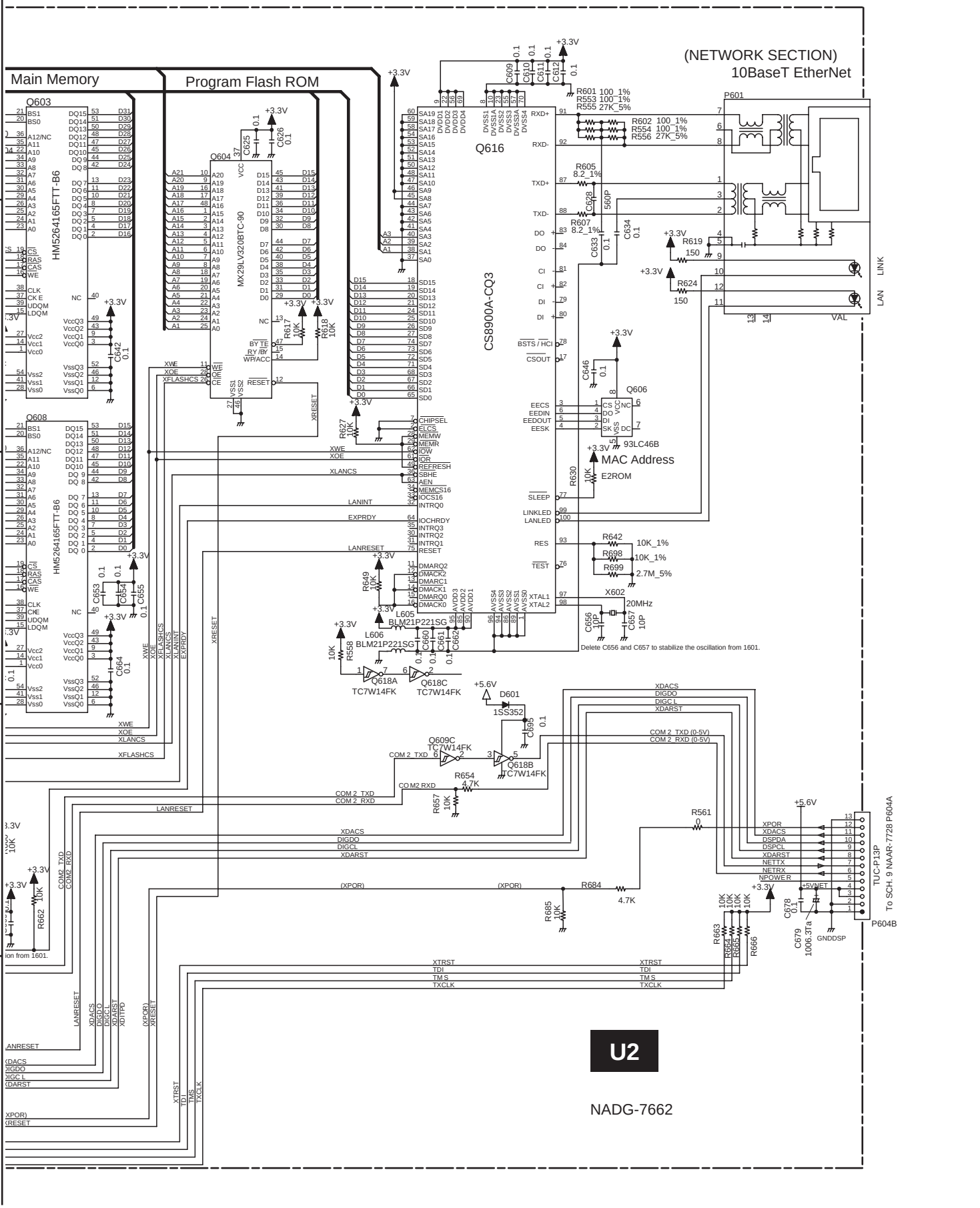
SCHEMATIC DIAGRAM 9-2 Mother Board Section



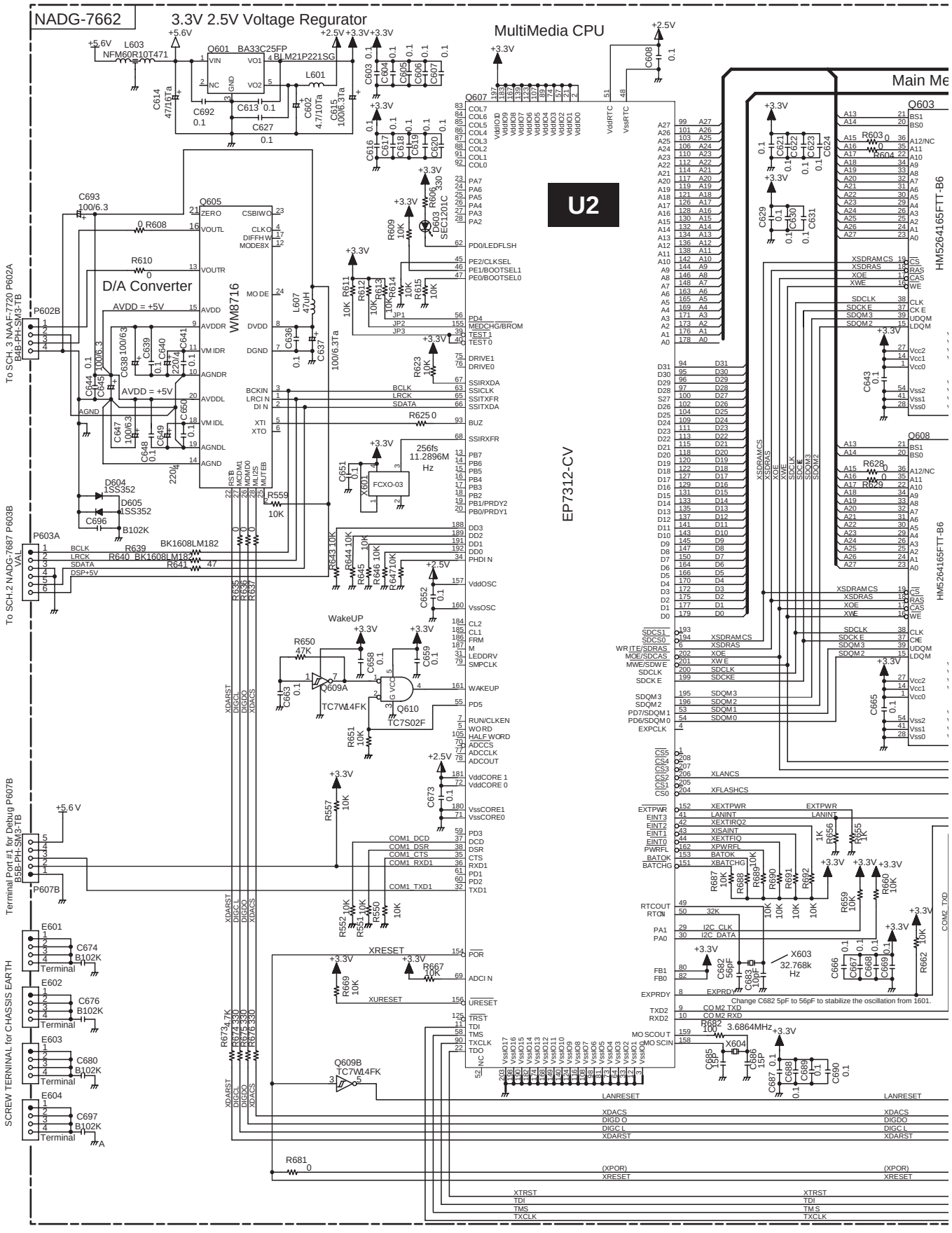
SCHEMATIC DIAGRAM 9-1 Mother Board Section



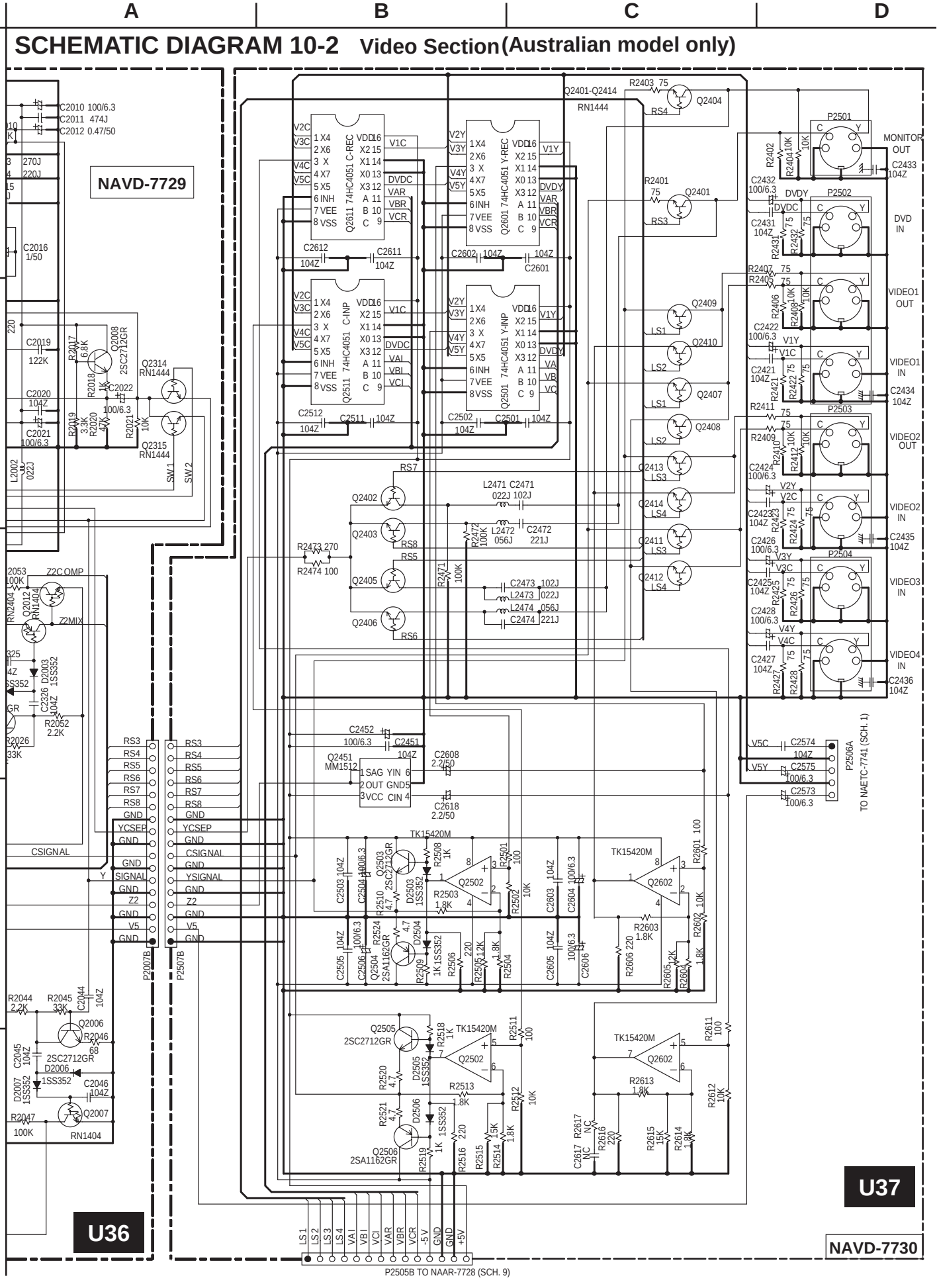
SCHEMATIC DIAGRAM 10-2 Net-tune circuit section



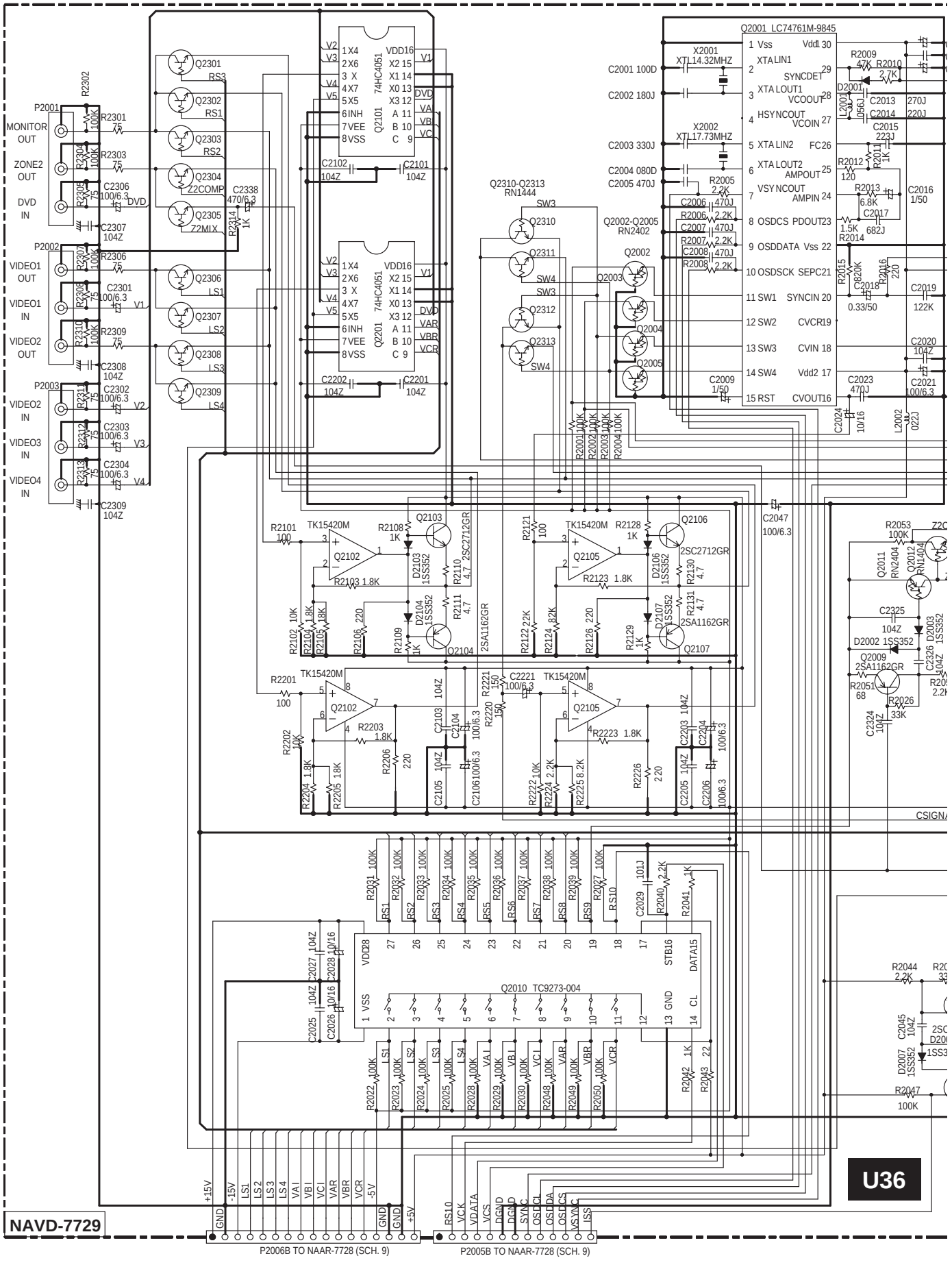
SCHEMATIC DIAGRAM 10-1 Net-tune circuit section



SCHEMATIC DIAGRAM 10-2 Video Section (Australian model only)

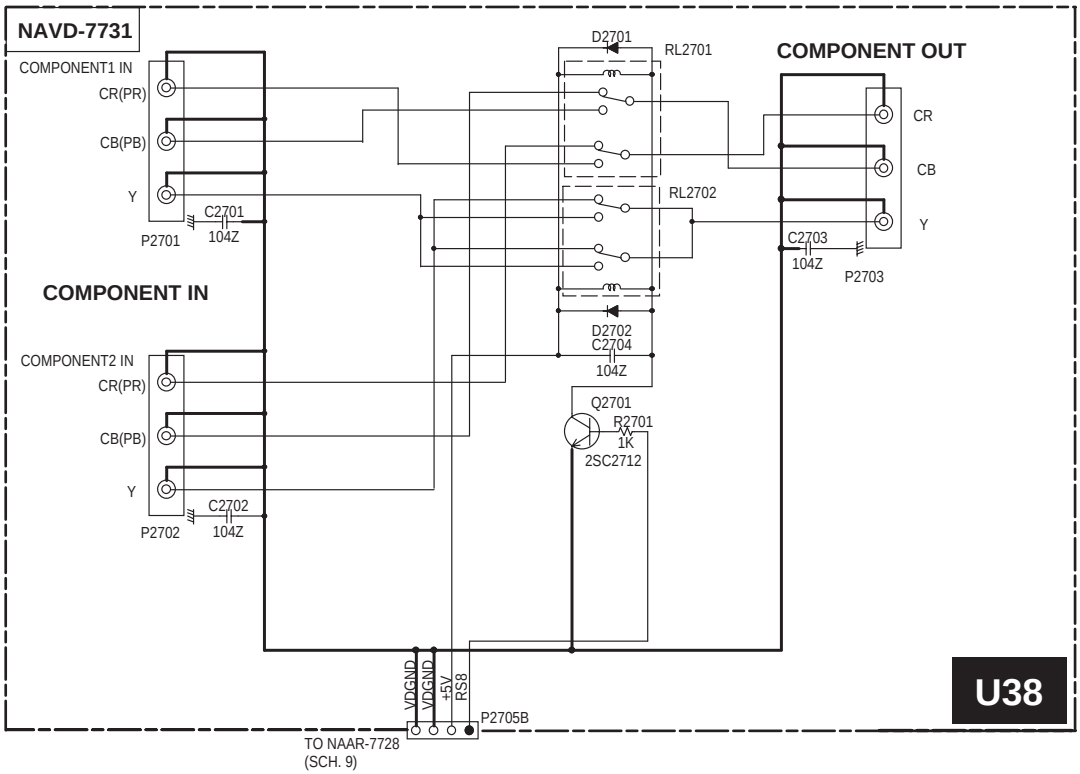


SCHEMATIC DIAGRAM 10-1 Video Section (Australian model only)



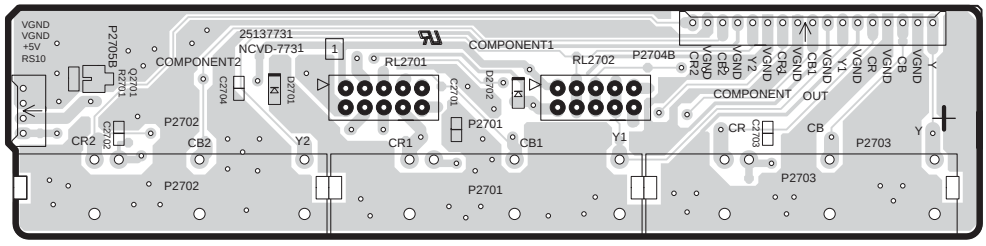
SCHEMATIC DIAGRAM 13

Component video section(Australian model only)

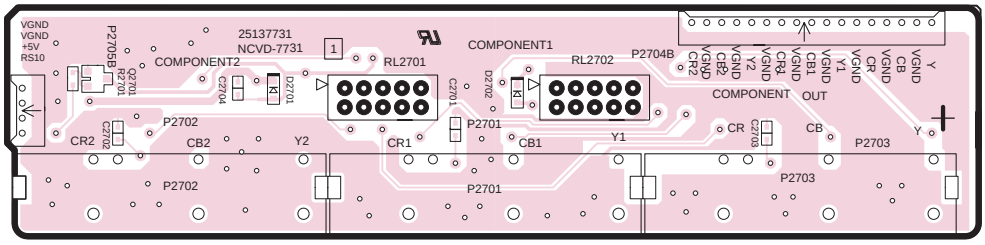


PRINTED CIRCUIT BOARD VIEW FROM SOLDERING SIDE 14

U38



COMPONENT PARTS SIDE

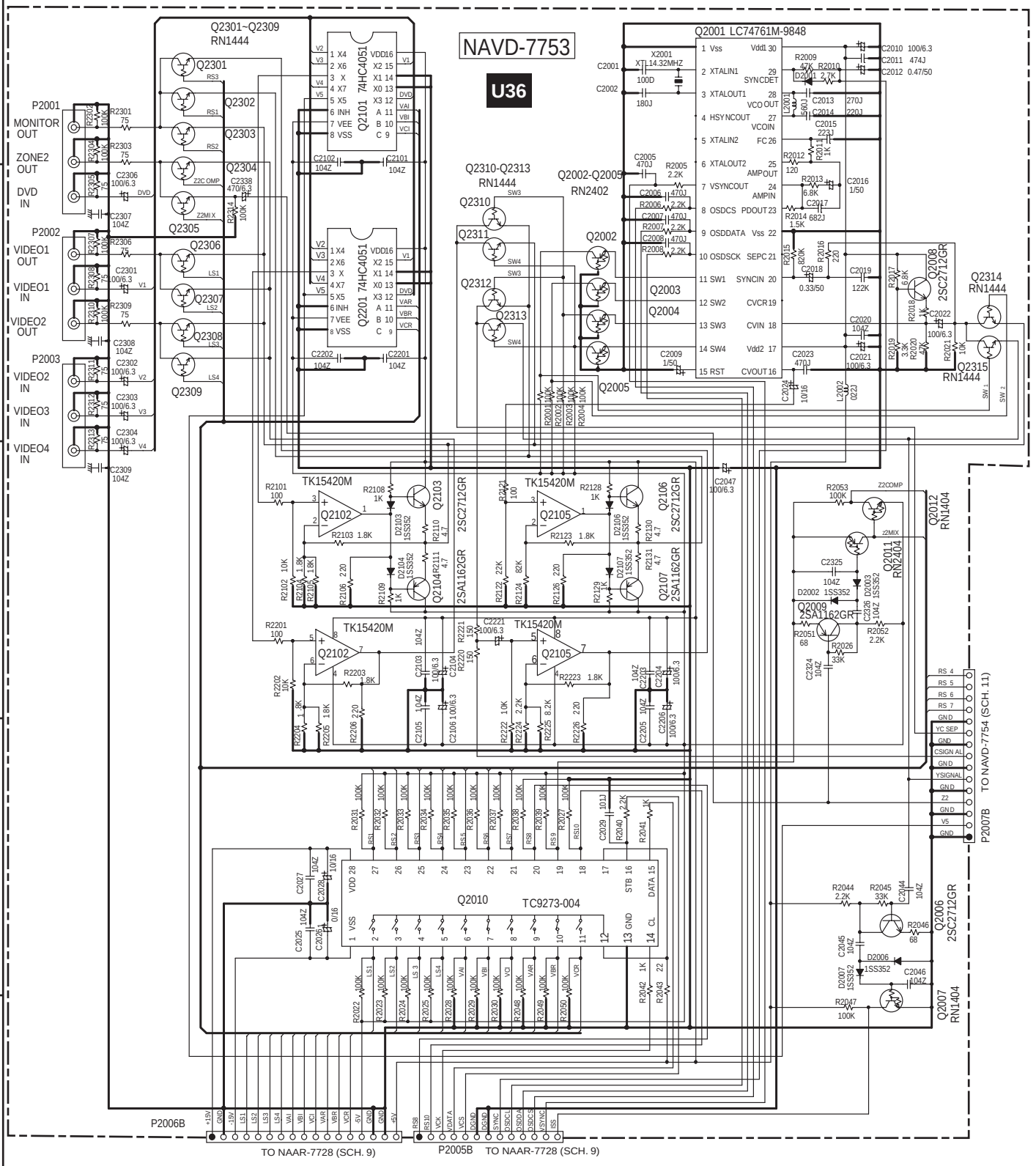


CHIP PARTS SIDE

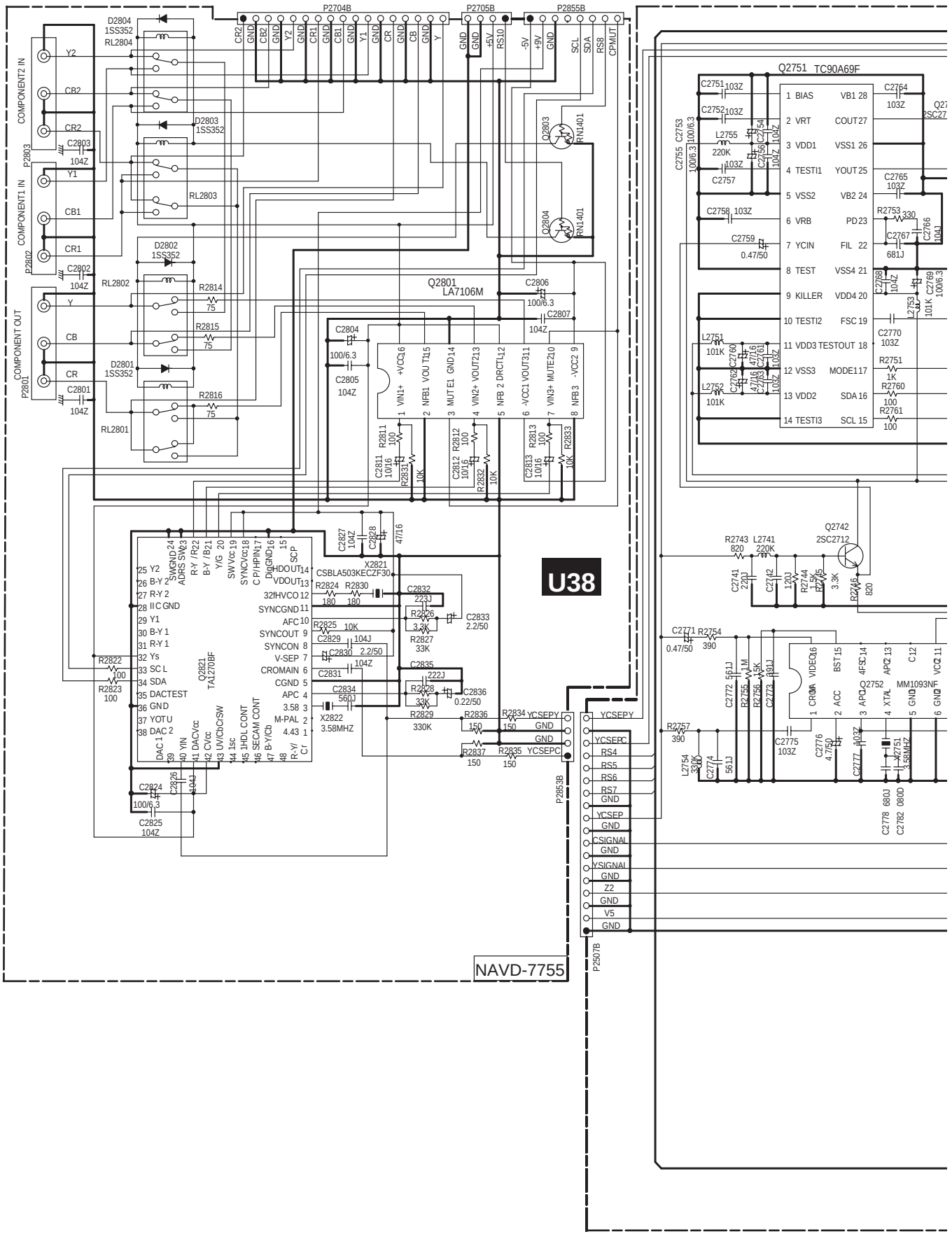
COMPONENT VIDEO PC BOARD(NAVD-7731)

SCHEMATIC DIAGRAM 13

Composite video section (USA model only)

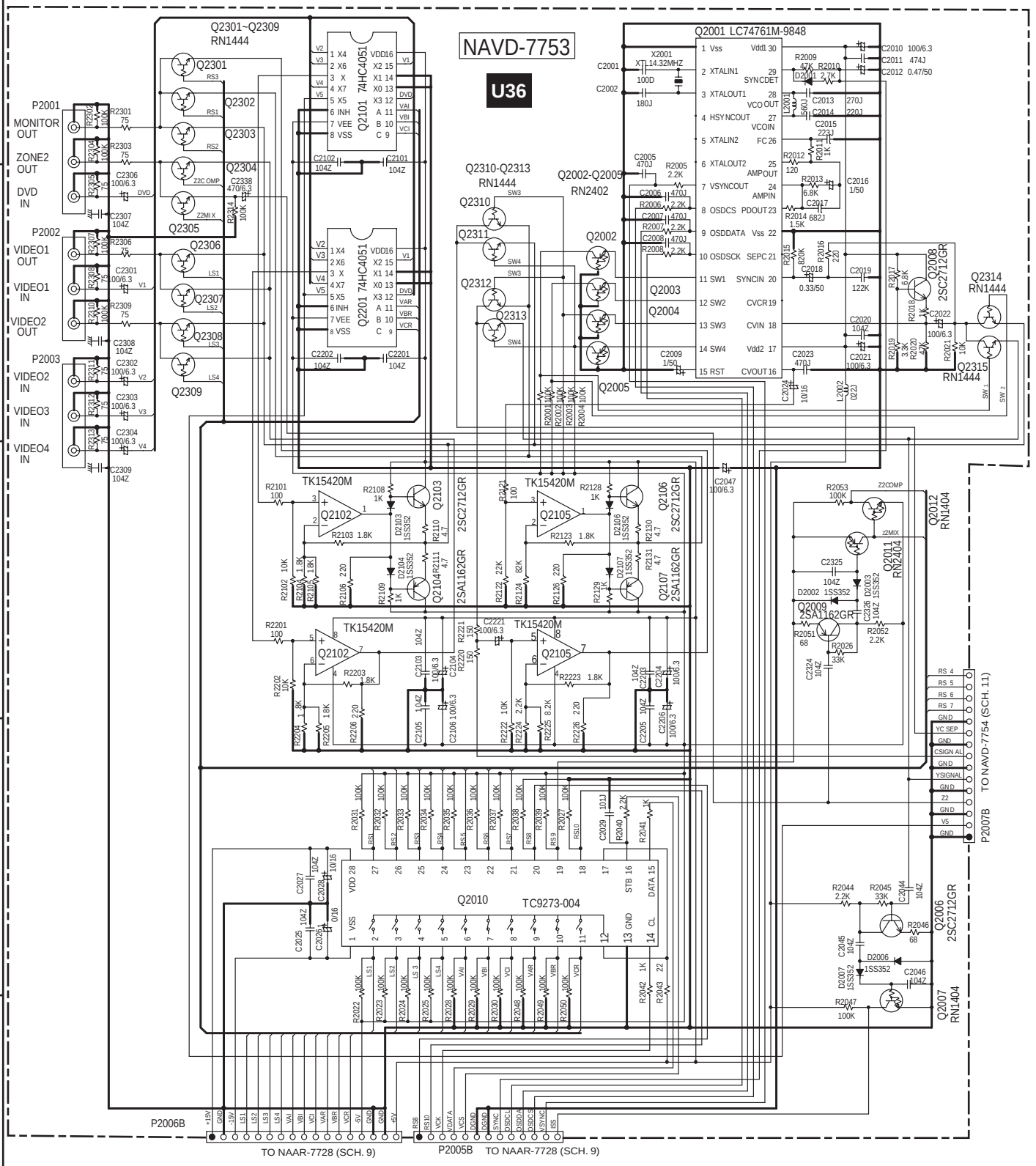


SCHEMATIC DIAGRAM 12-1 Component and S video sections (USA model)

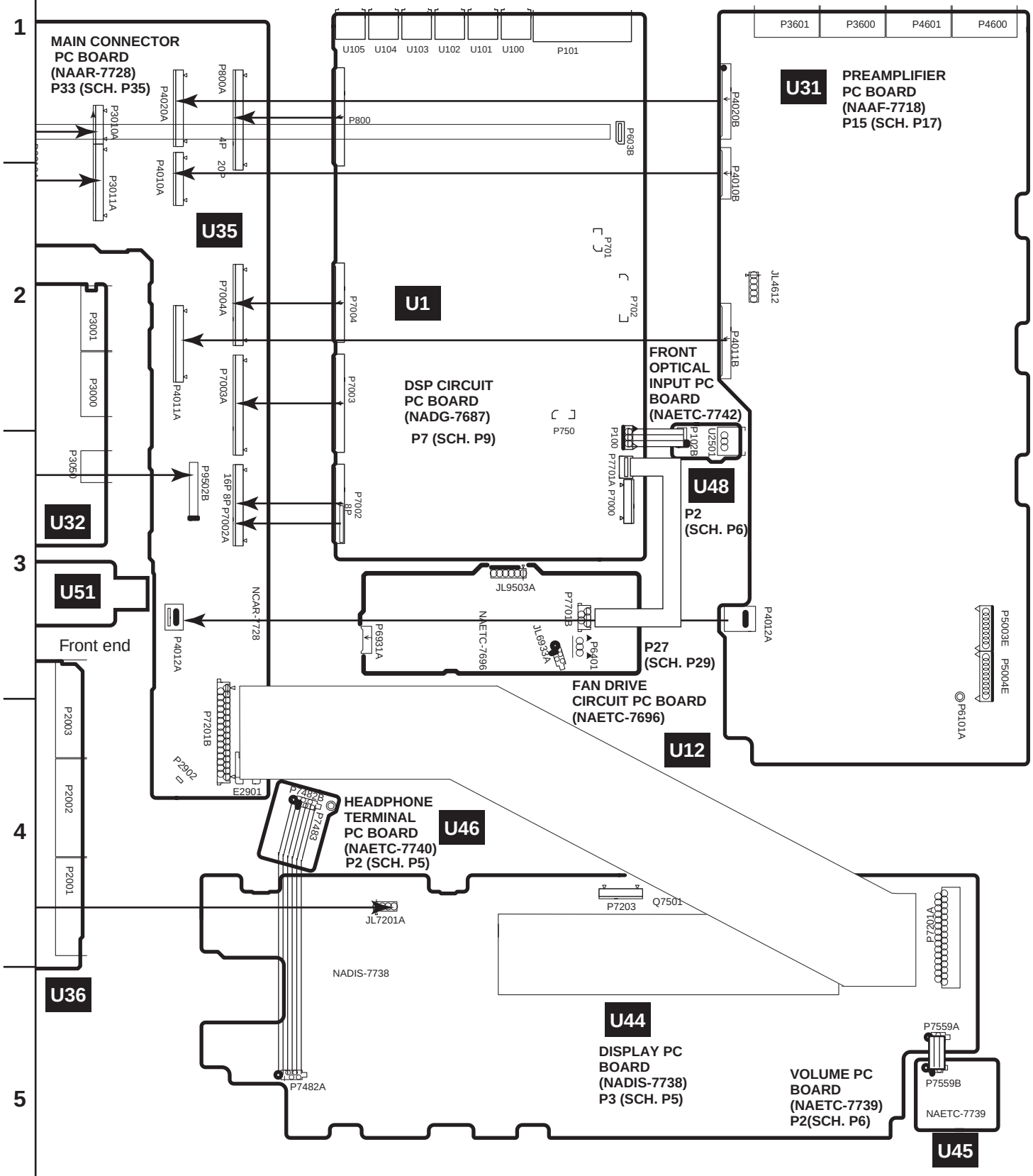


SCHEMATIC DIAGRAM 13

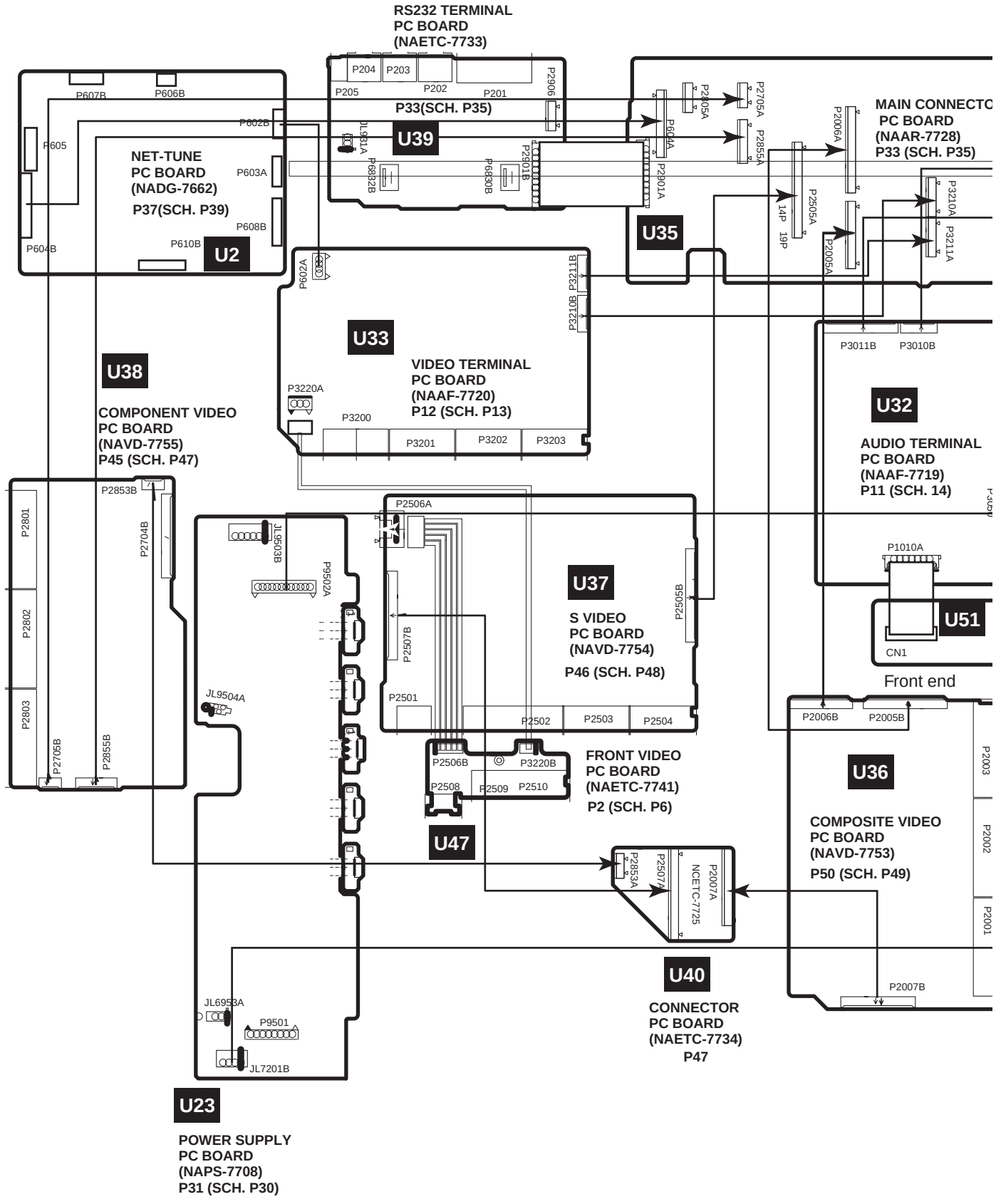
Composite video section (USA model only)



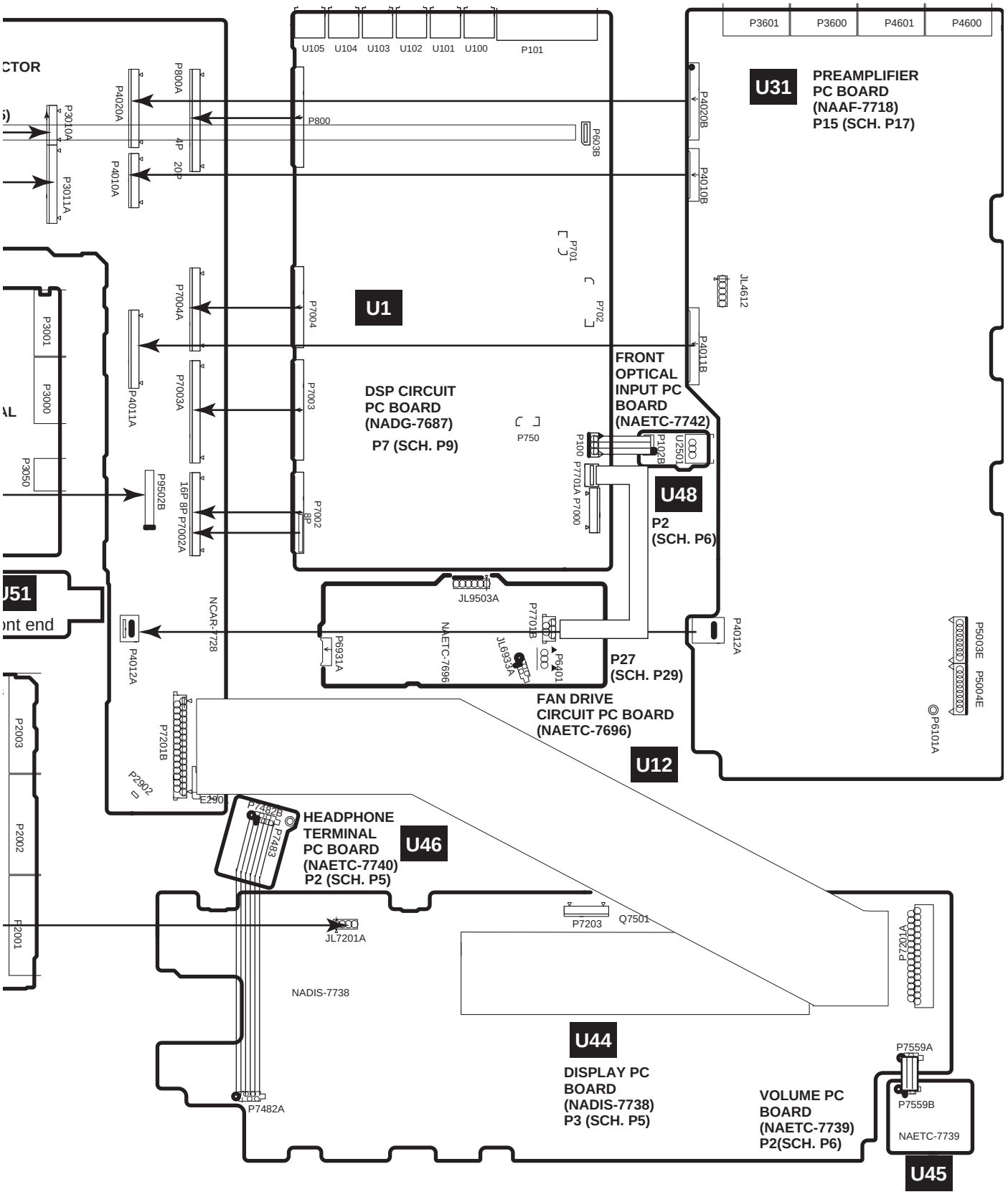
WIRING VIEW 2 (USA model)



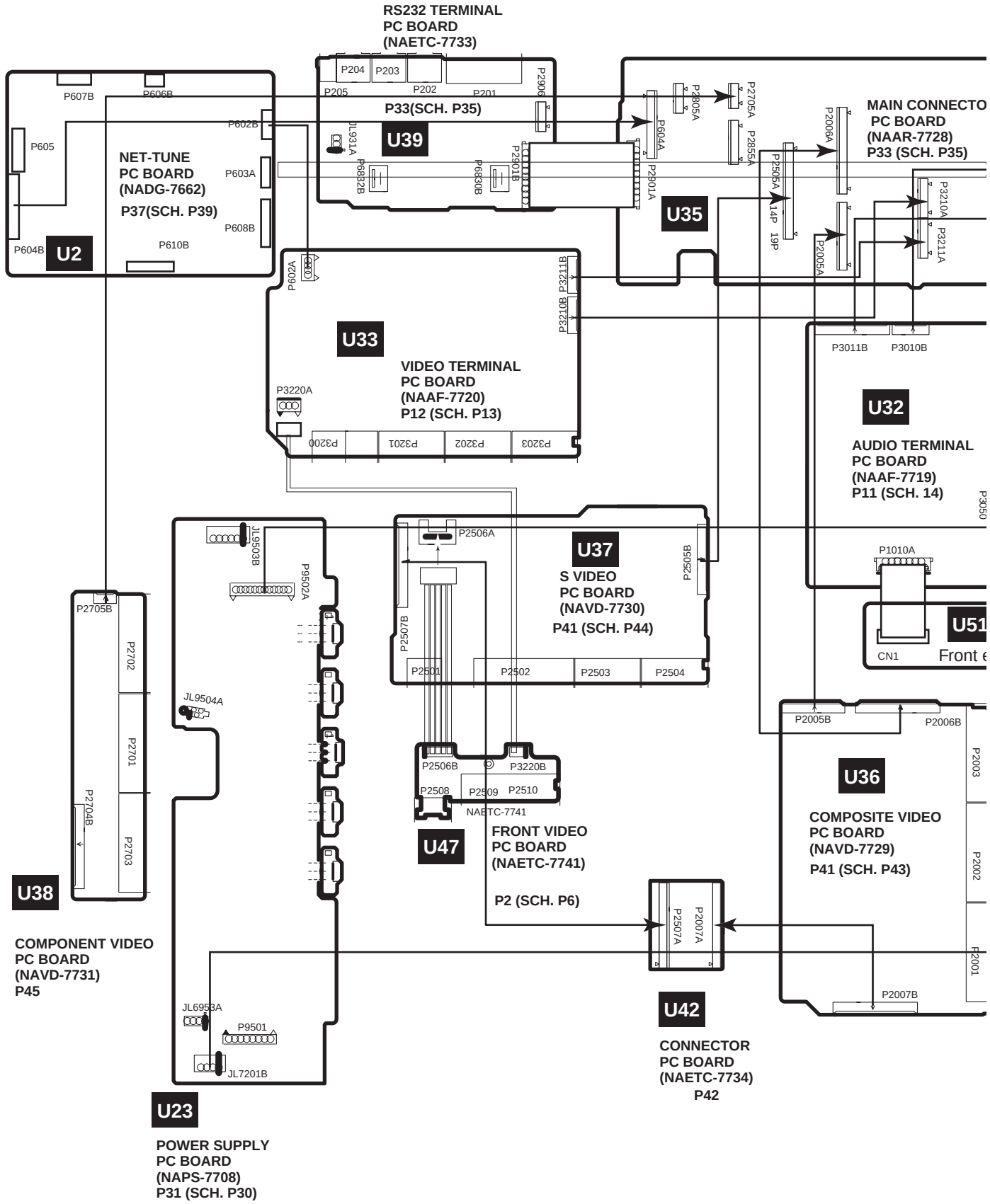
WIRING VIEW 1 (USA model)



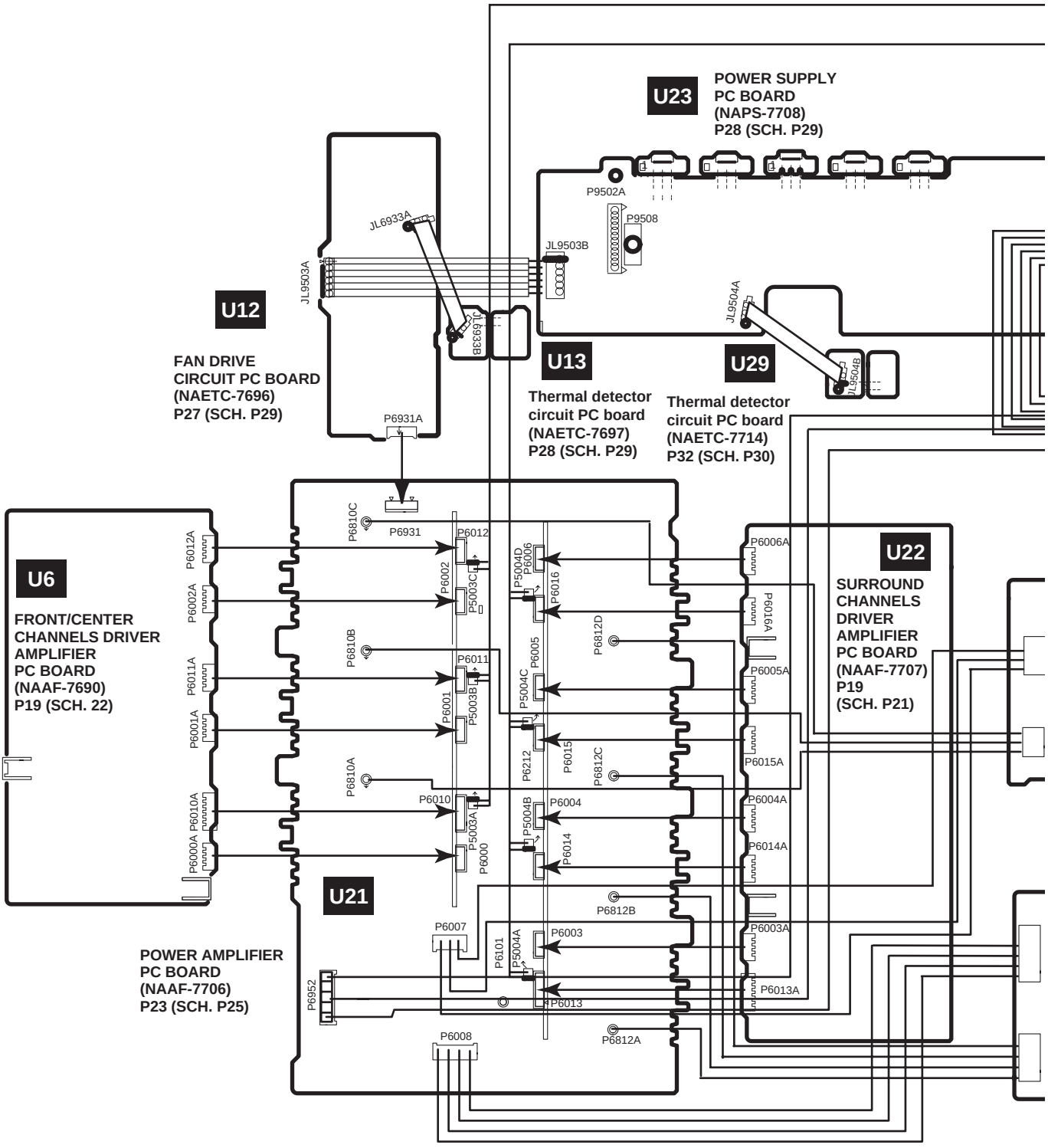
WIRING VIEW 2 (Australian model)



WIRING VIEW 1 (Australian model)



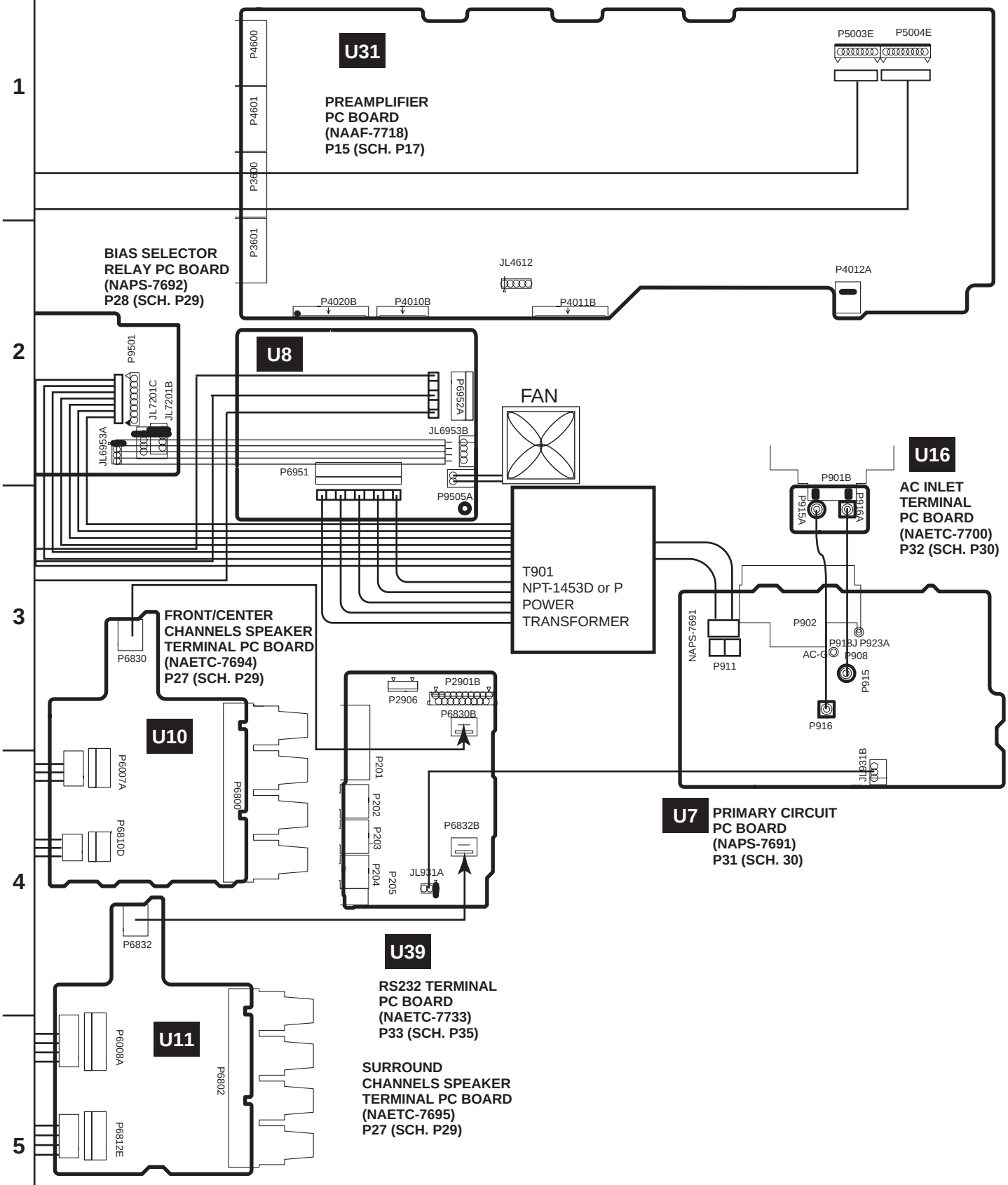
WIRING VIEW 3



A B C D

1 2 3 4 5

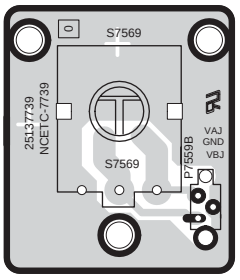
WIRING VIEW 4

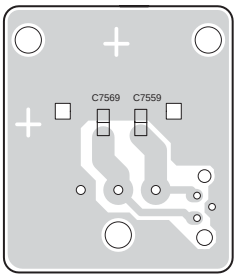


A B C D

PRINTED CIRCUIT BOARD VIEW FROM SOLDERING SIDE 1

U45

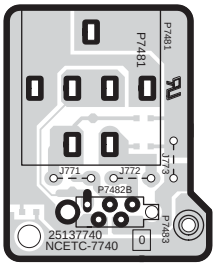


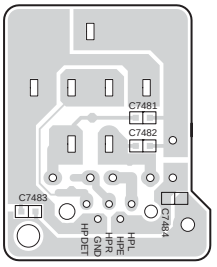


COMPONENT SIDE SOLDERING SIDE

VOLUME PC BOARD(NAETC-7739)

U46

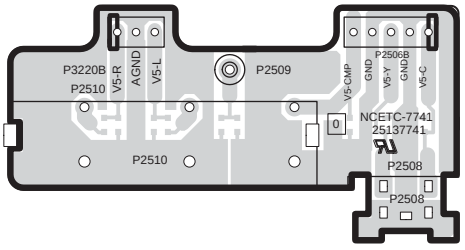


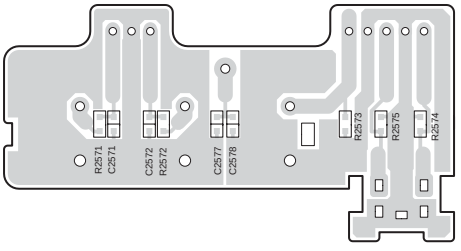


COMPONENT SIDE SOLDERING SIDE

HEADPHONE TERMINAL PC BOARD(NAETC-7740)

U47

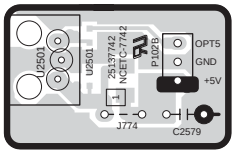


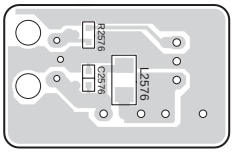


COMPONENT SIDE SOLDERING SIDE

FRONT VIDEO PC BOARD(NAETC-7741)

U48

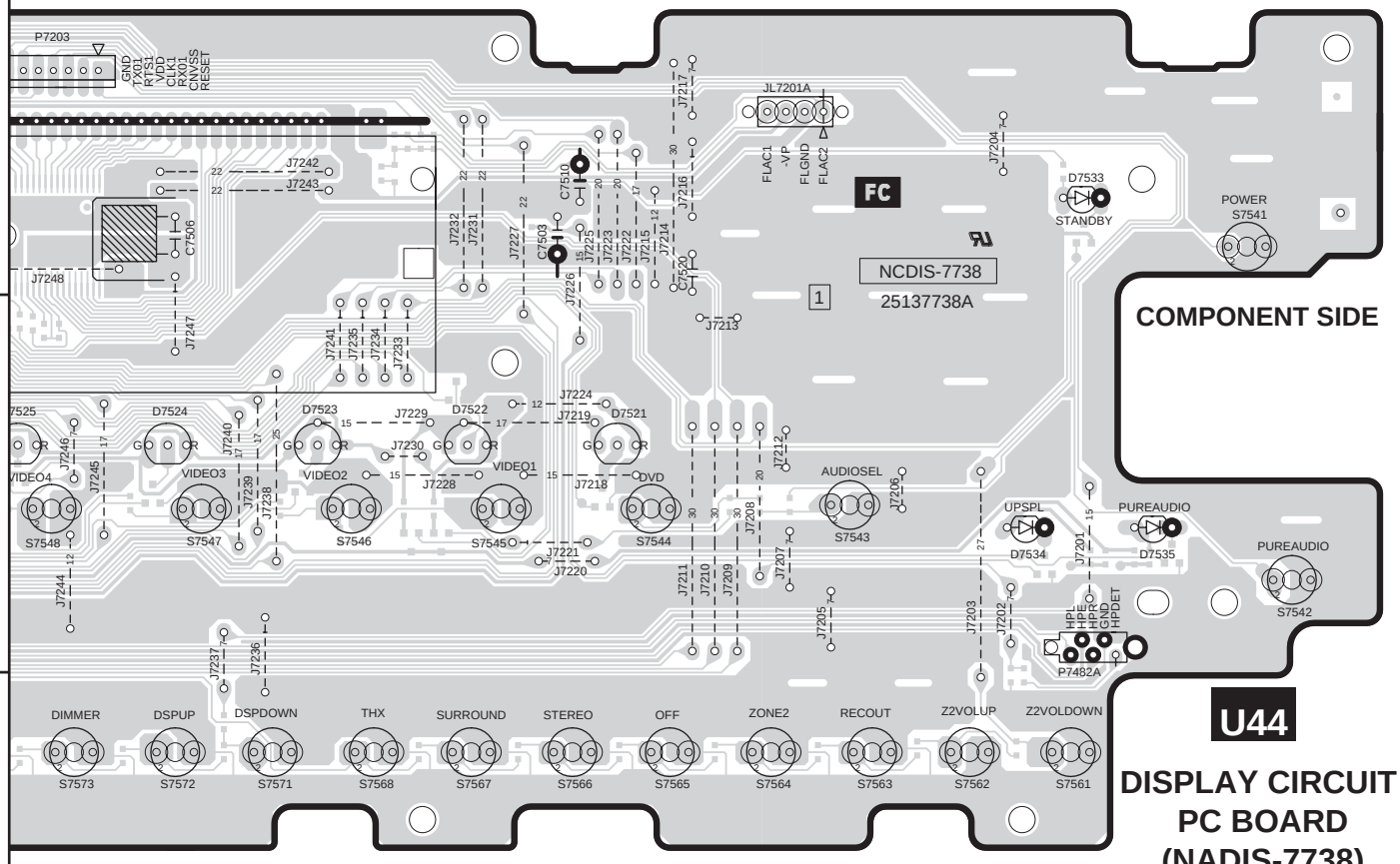


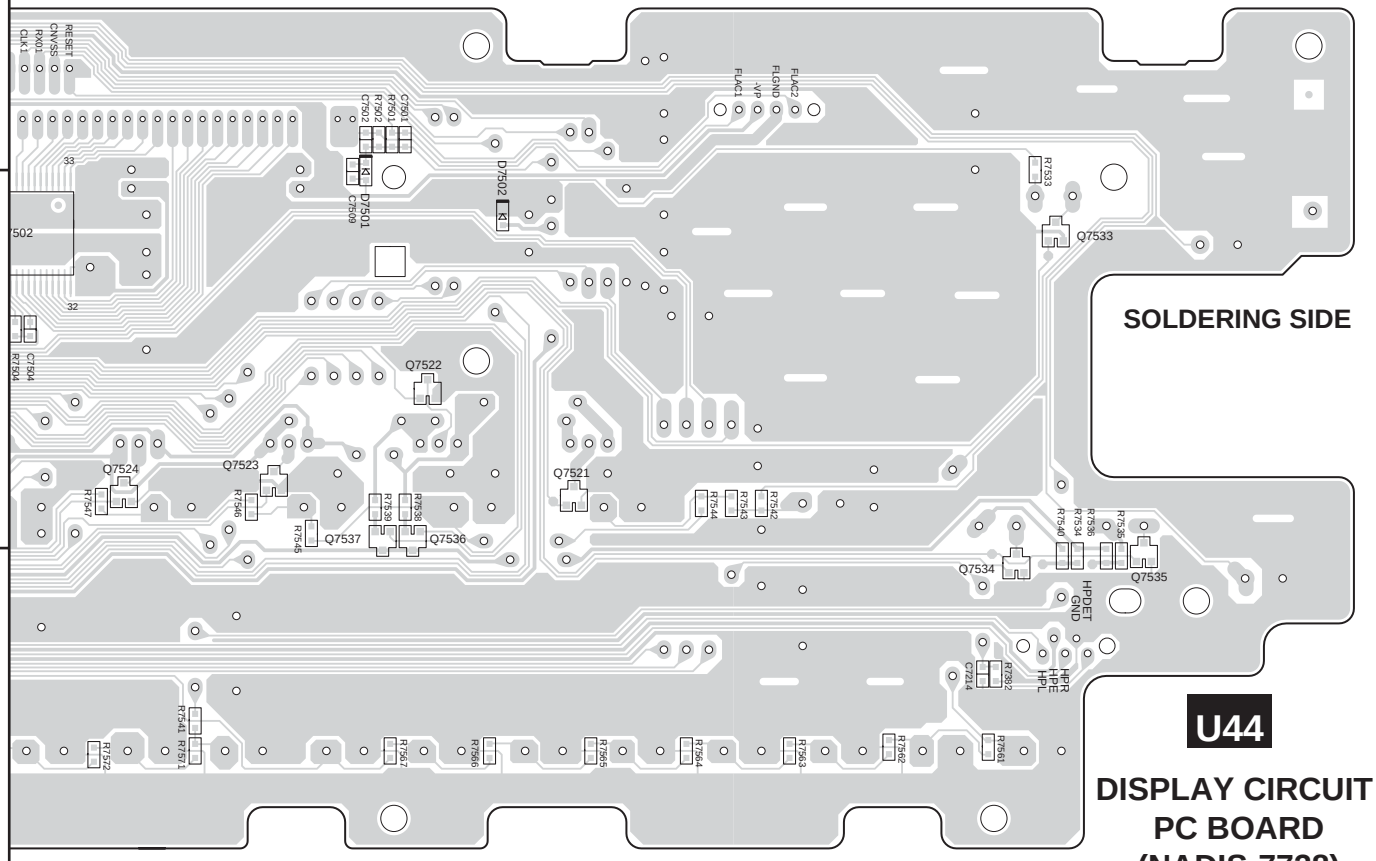


COMPONENT SIDE SOLDERING SIDE

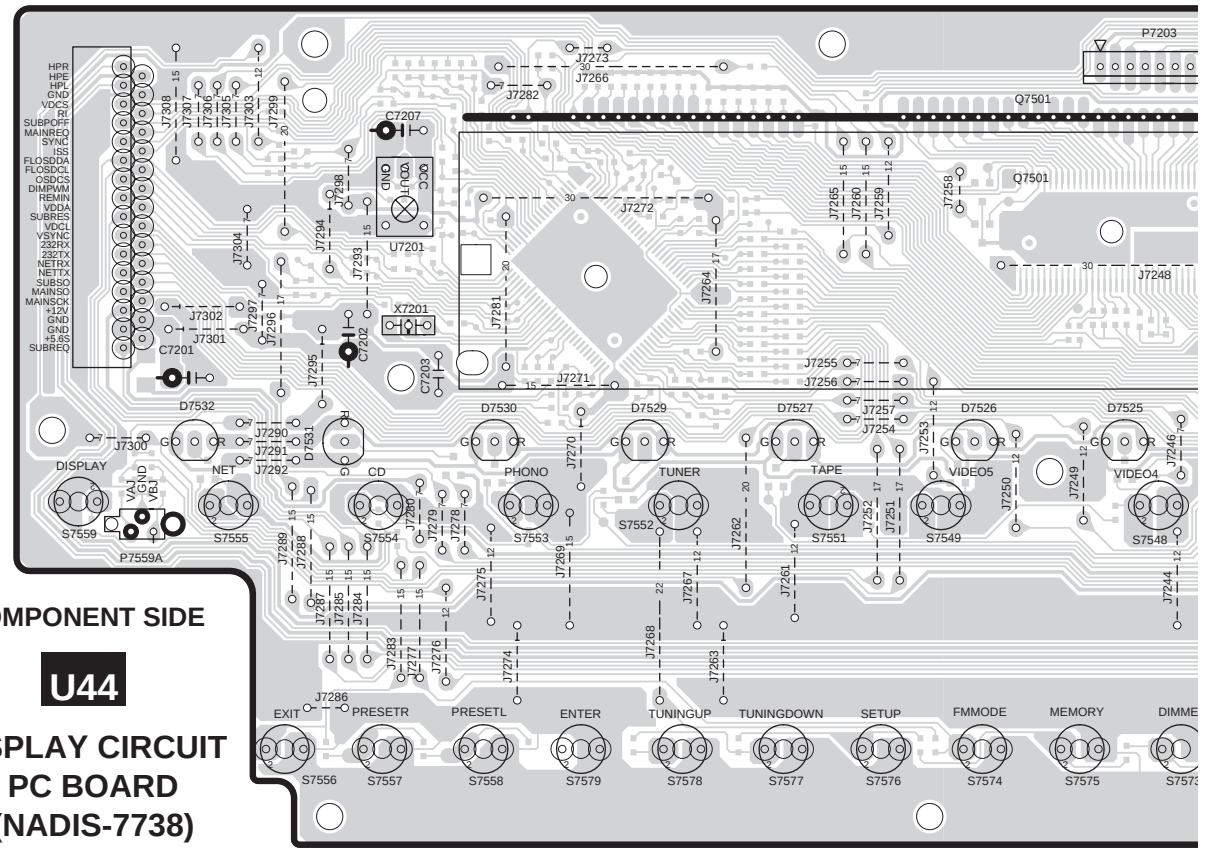
FRONT OPTICAL INPUT PC BOARD(NAETC-7742)

PRINTED CIRCUIT BOARD VIEW FROM SOLDERING SIDE 2-2





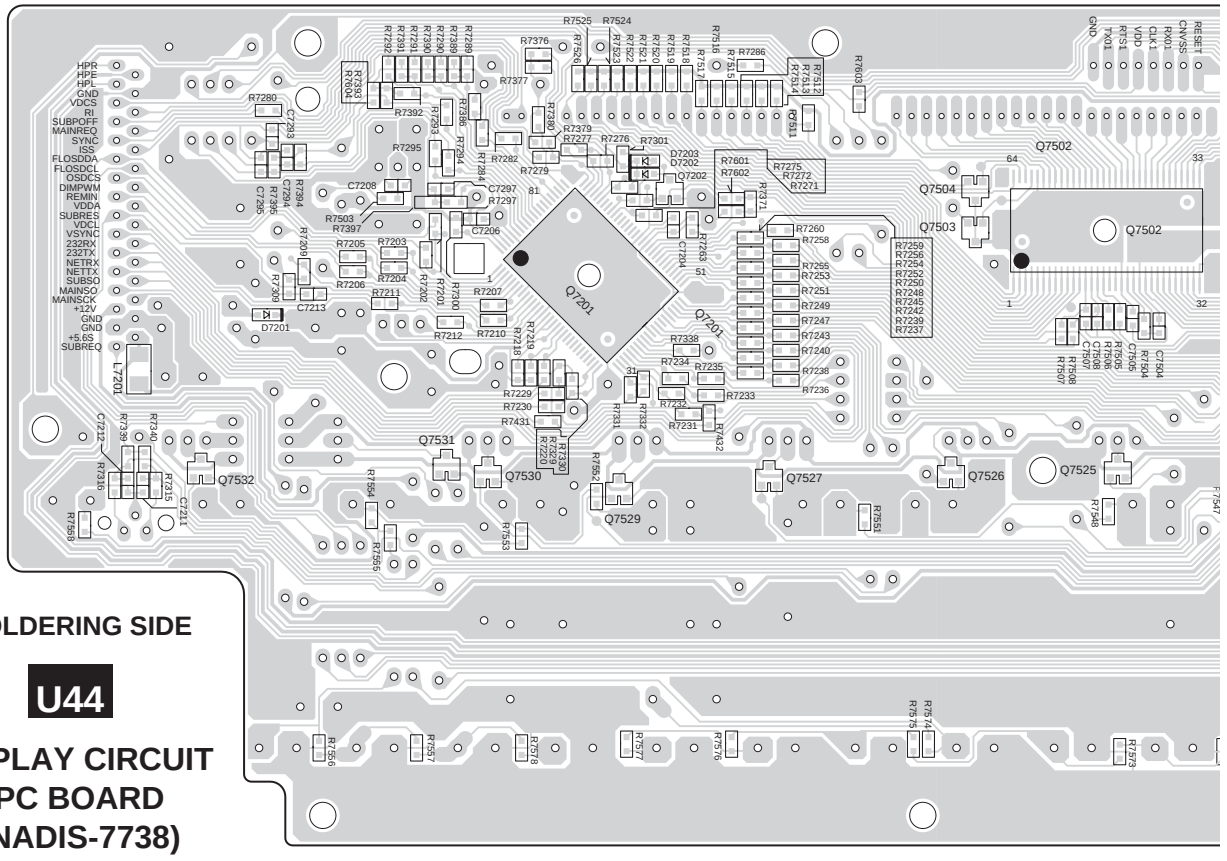
PRINTED CIRCUIT BOARD VIEW FROM SOLDERING SIDE 2-1



COMPONENT SIDE

U44

DISPLAY CIRCUIT PC BOARD (NADIS-7738)



SOLDERING SIDE

U44

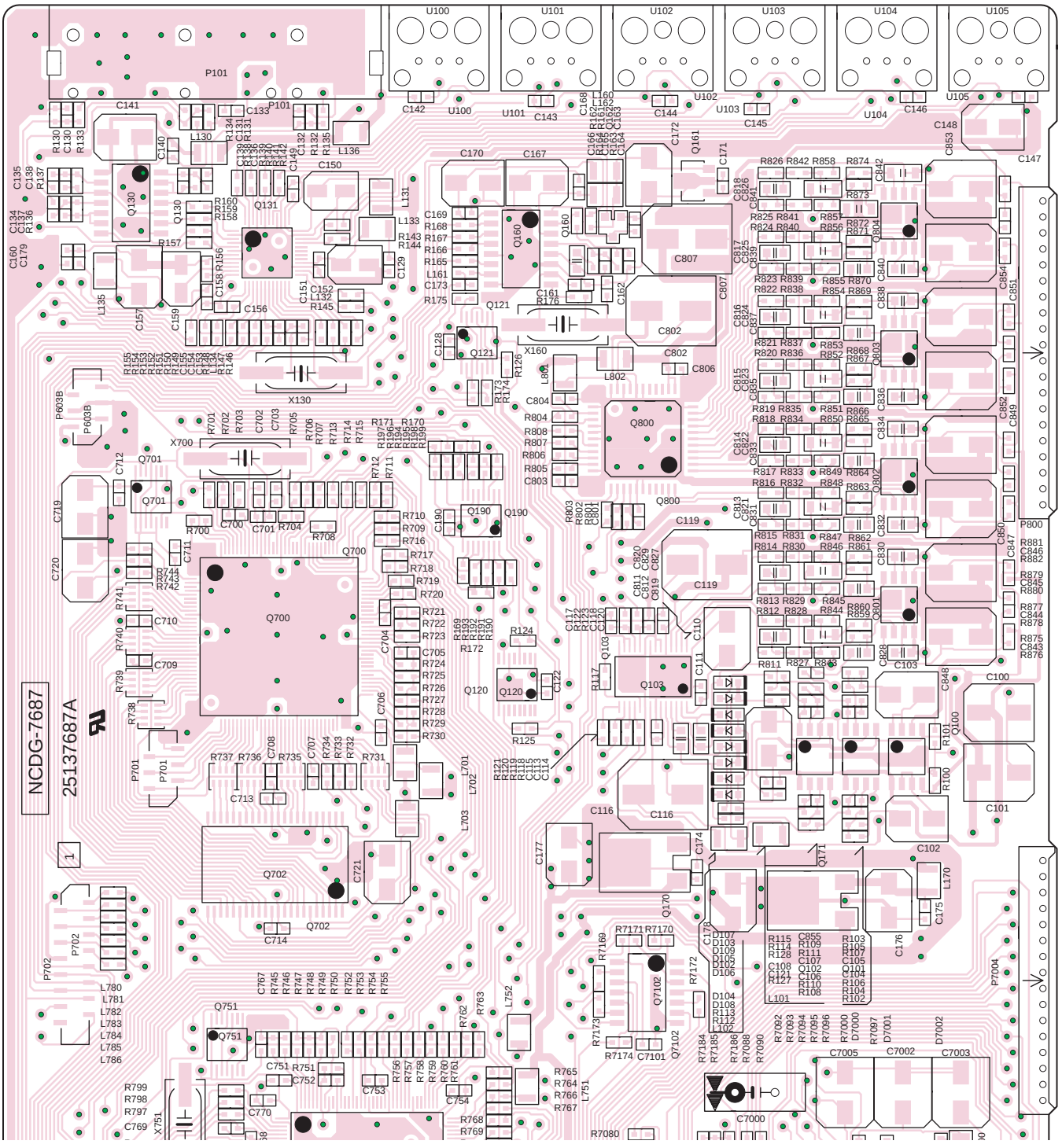
DISPLAY CIRCUIT PC BOARD (NADIS-7738)

PRINTED CIRCUIT BOARD VIEW 3-2

U1

DSP CIRCUIT PC BOARD (NADG-7687)

CHIP PARTS SIDE


NCDG-7687
25137687A
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U103
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P800
P603B
X130
X160
X700
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Q700
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Q7102
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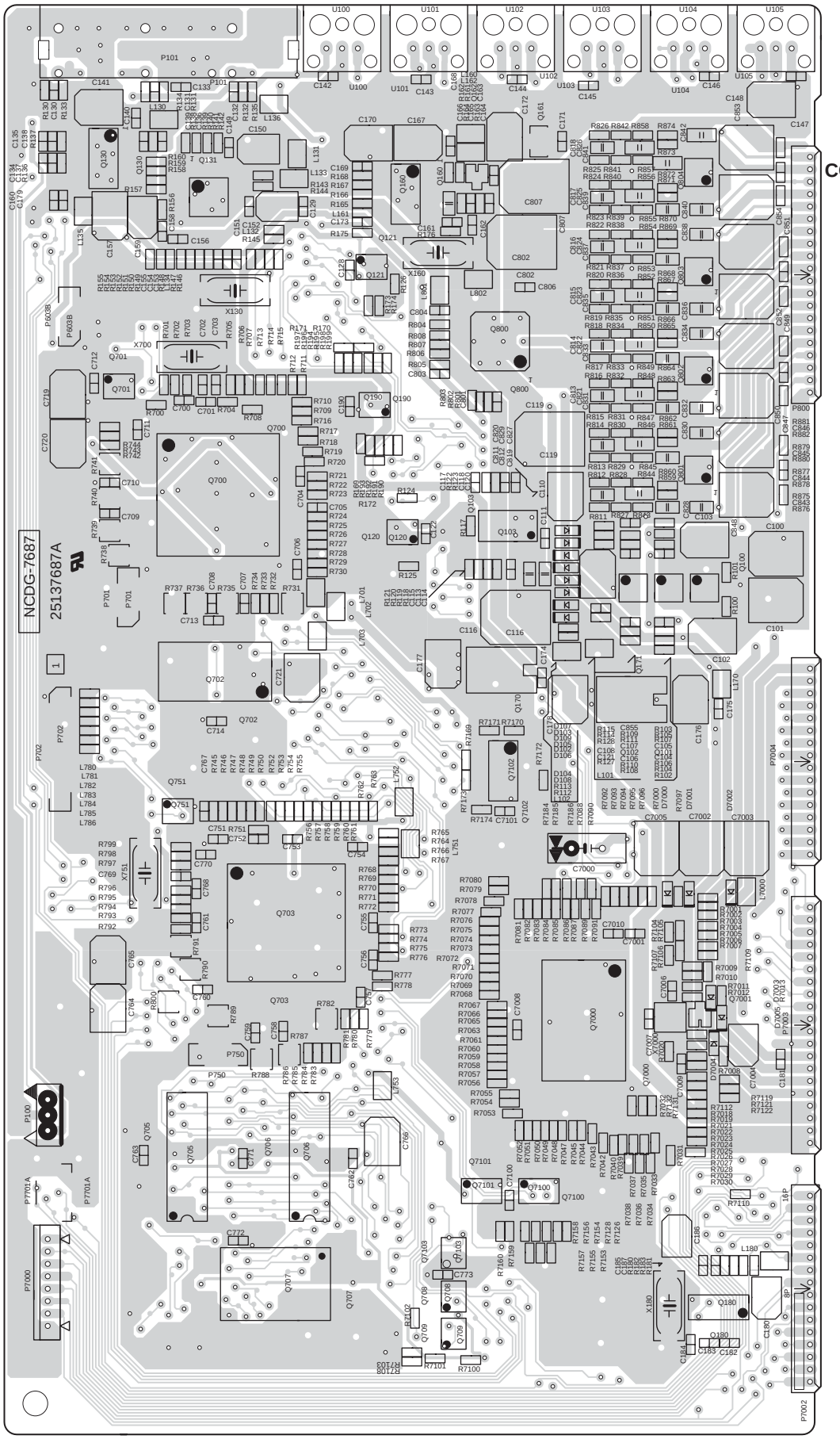
PRINTED CIRCUIT BOARD VIEW 3-1

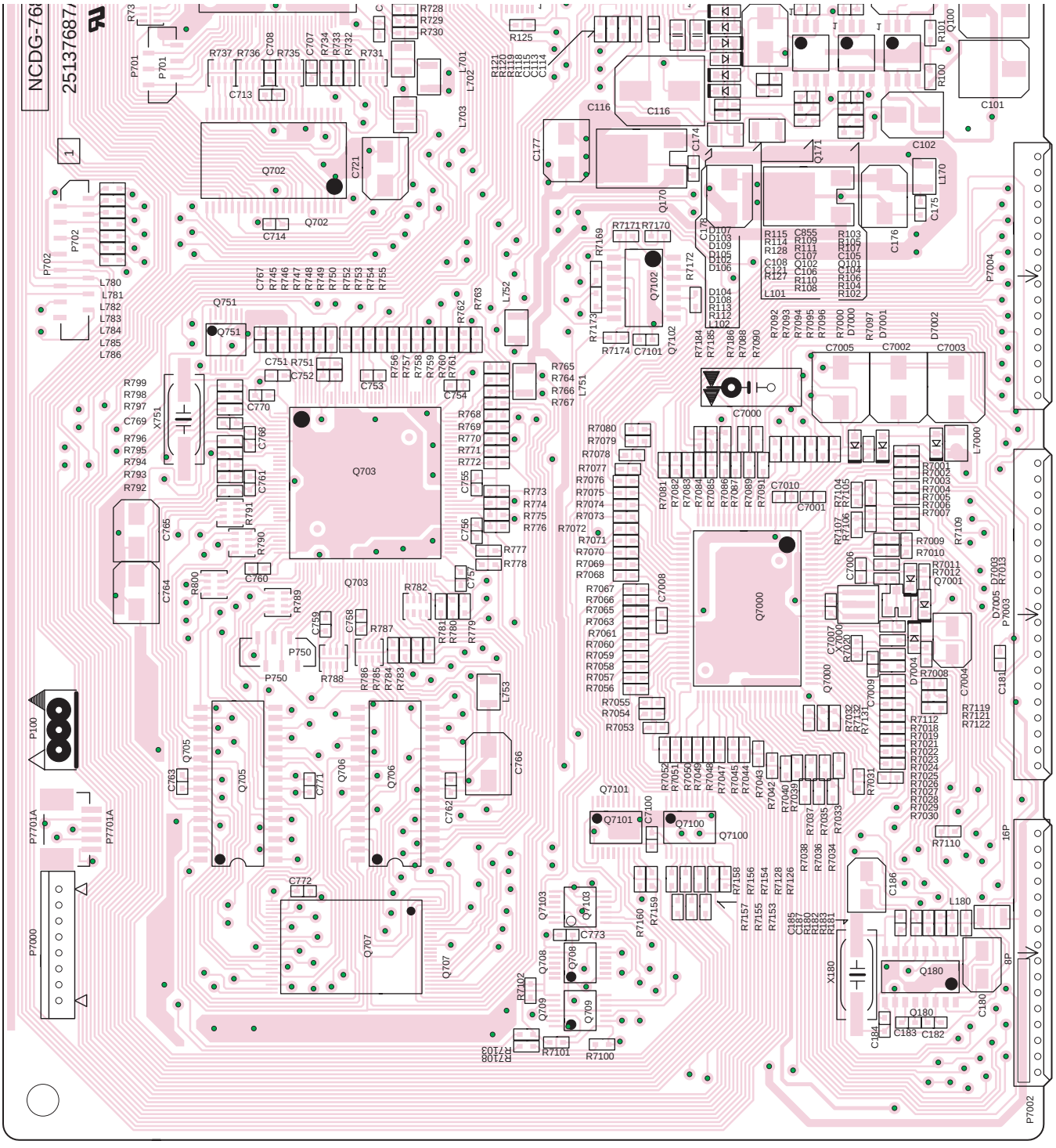


U1

DSP CIRCUIT PC BOARD (NADG-7687)

COMPONENT PARTS SIDE

PRINTED CIRCUIT BOARD VIEW 3-3

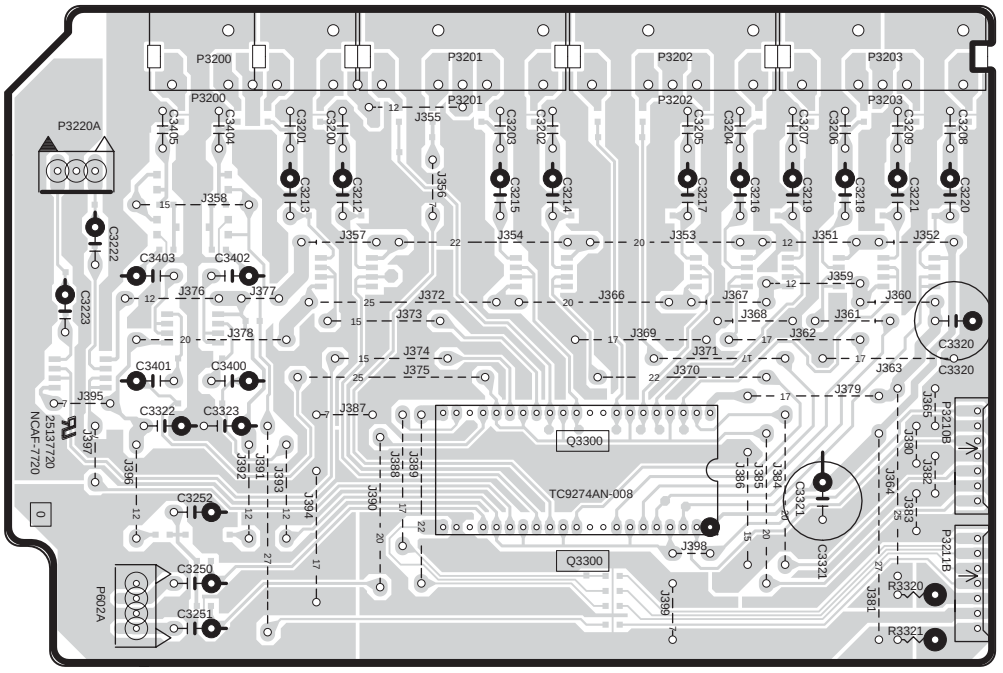


U1

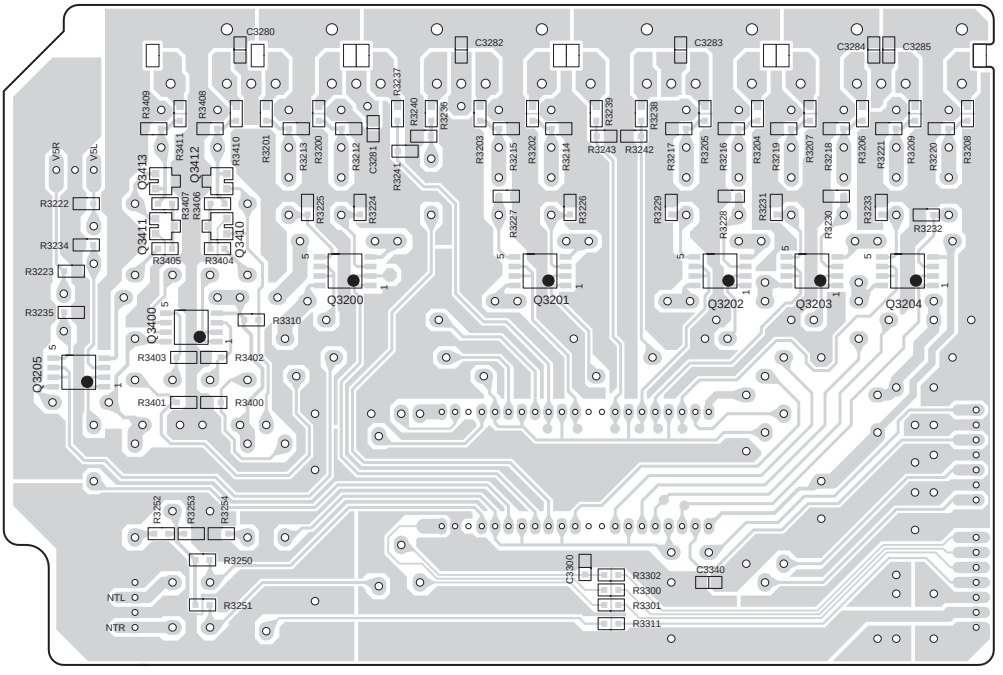
DSP CIRCUIT
PC BOARD
(NADG-7687)
CHIP PARTS
SIDE

PRINTED CIRCUIT BOARD VIEW FROM SOLDERING SIDE 4-2

U33



COMPONENT SIDE

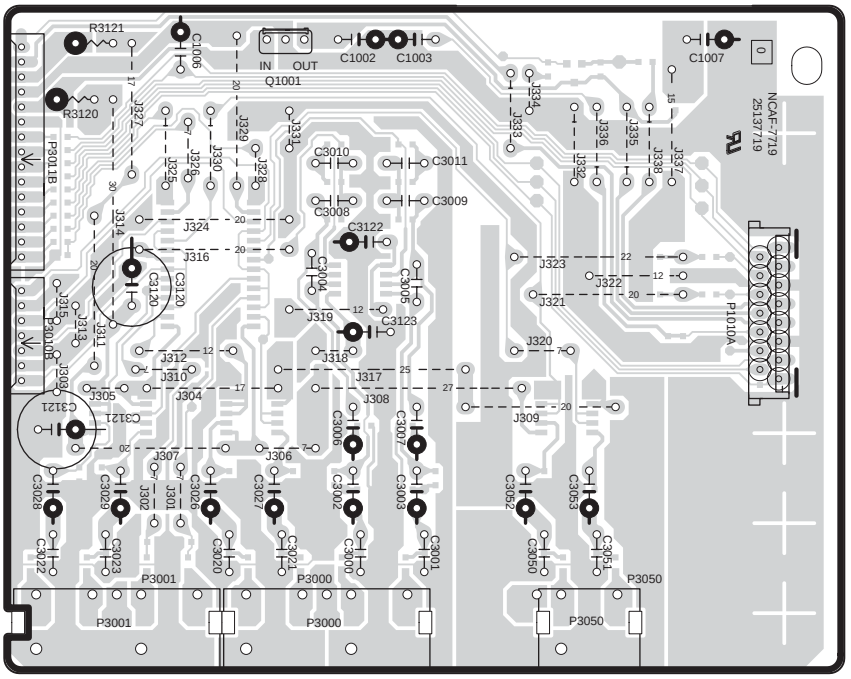


SOLDERING SIDE

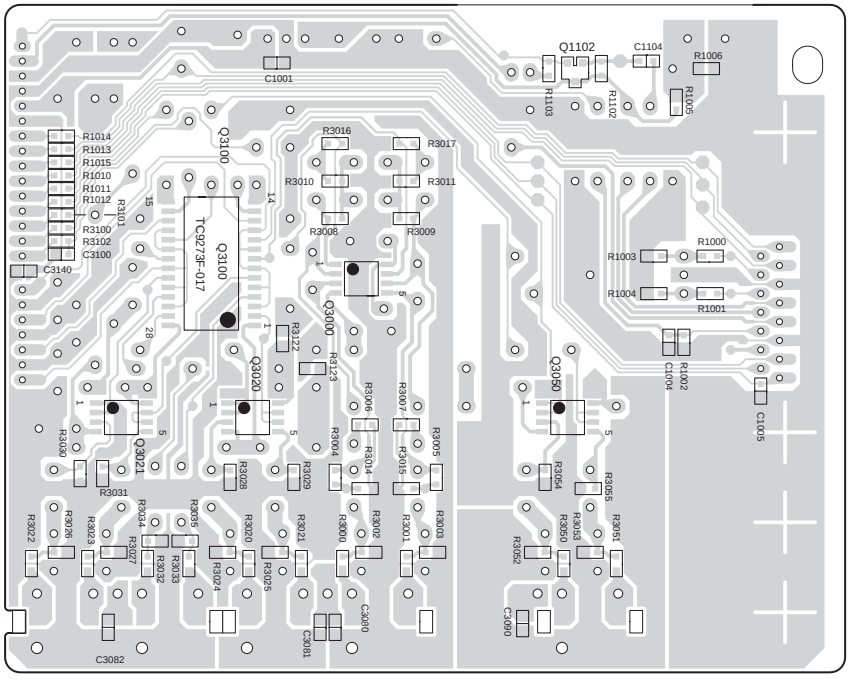
VIDEO TERMINAL PC BOARD(NAAF-7720)

PRINTED CIRCUIT BOARD VIEW FROM SOLDERING SIDE 4-1

U32



COMPONENT SIDE



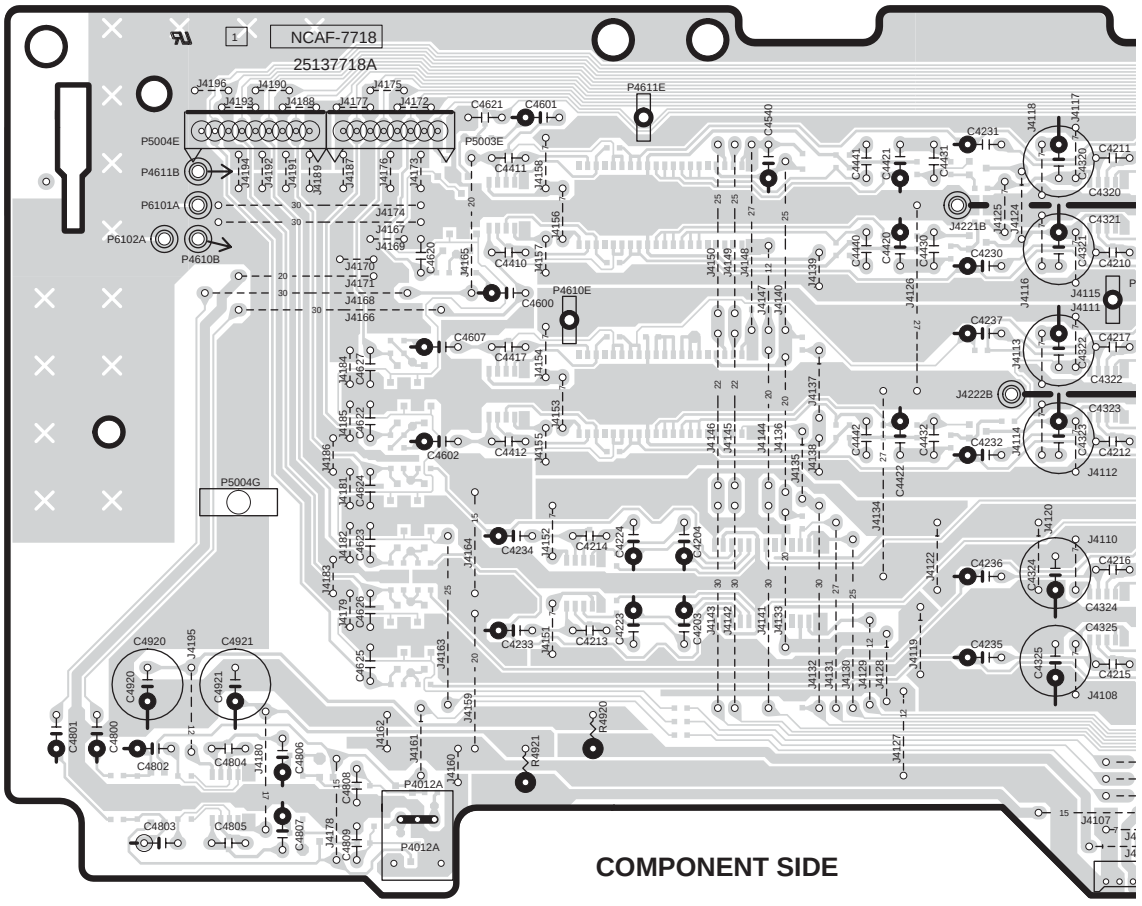
SOLDERING SIDE

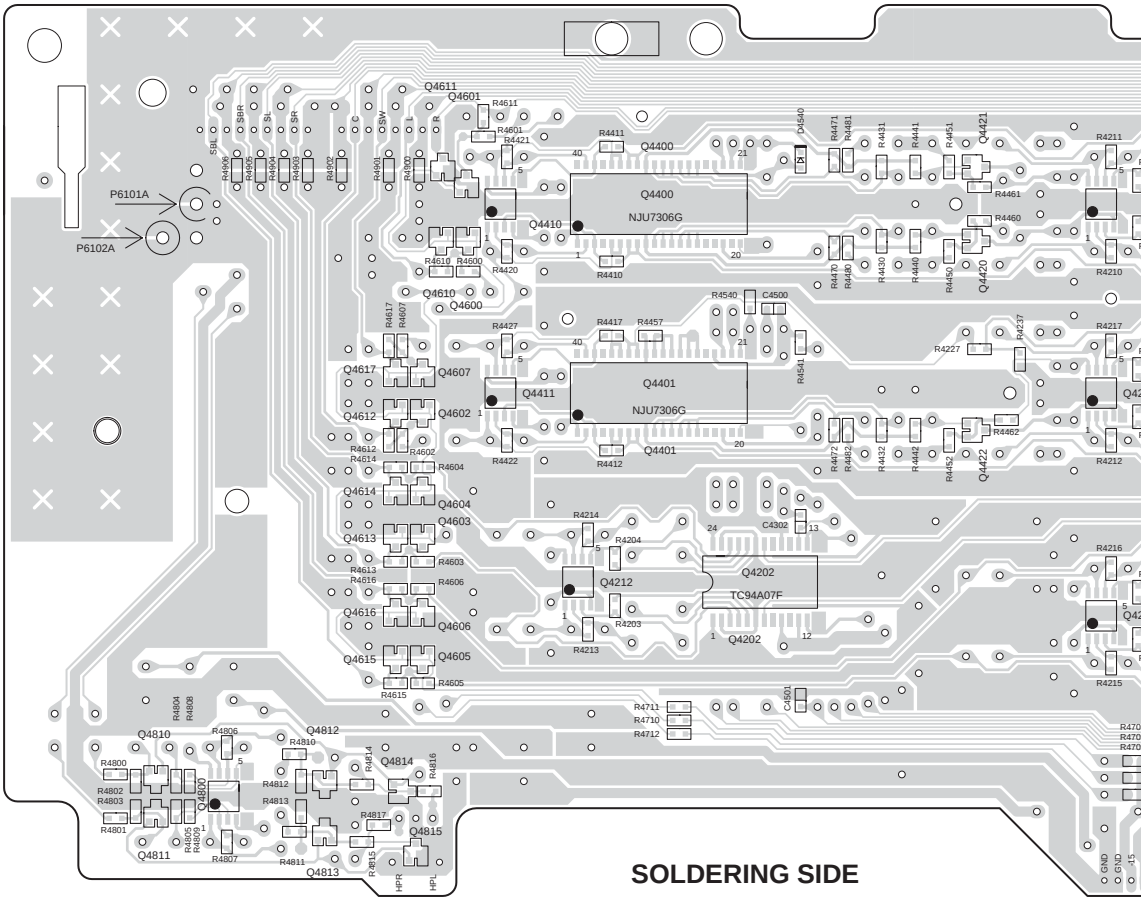
AUDIO TERMINAL PC BOARD(NAAF-7719)

PRINTED CIRCUIT BOARD VIEW FROM SOLDERING SIDE 5-1

U31

PREAMPLIFIER PC BOARD (NAAF-7718)

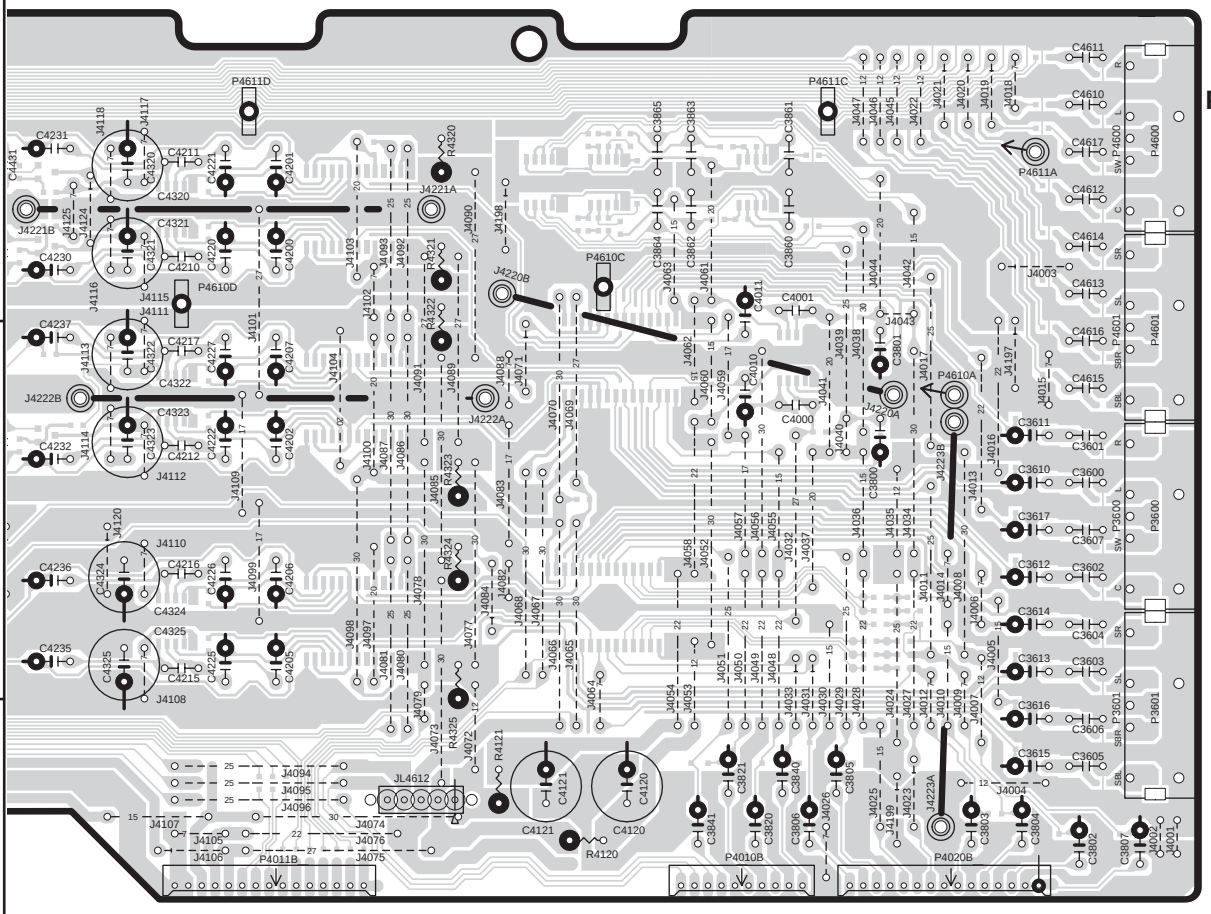




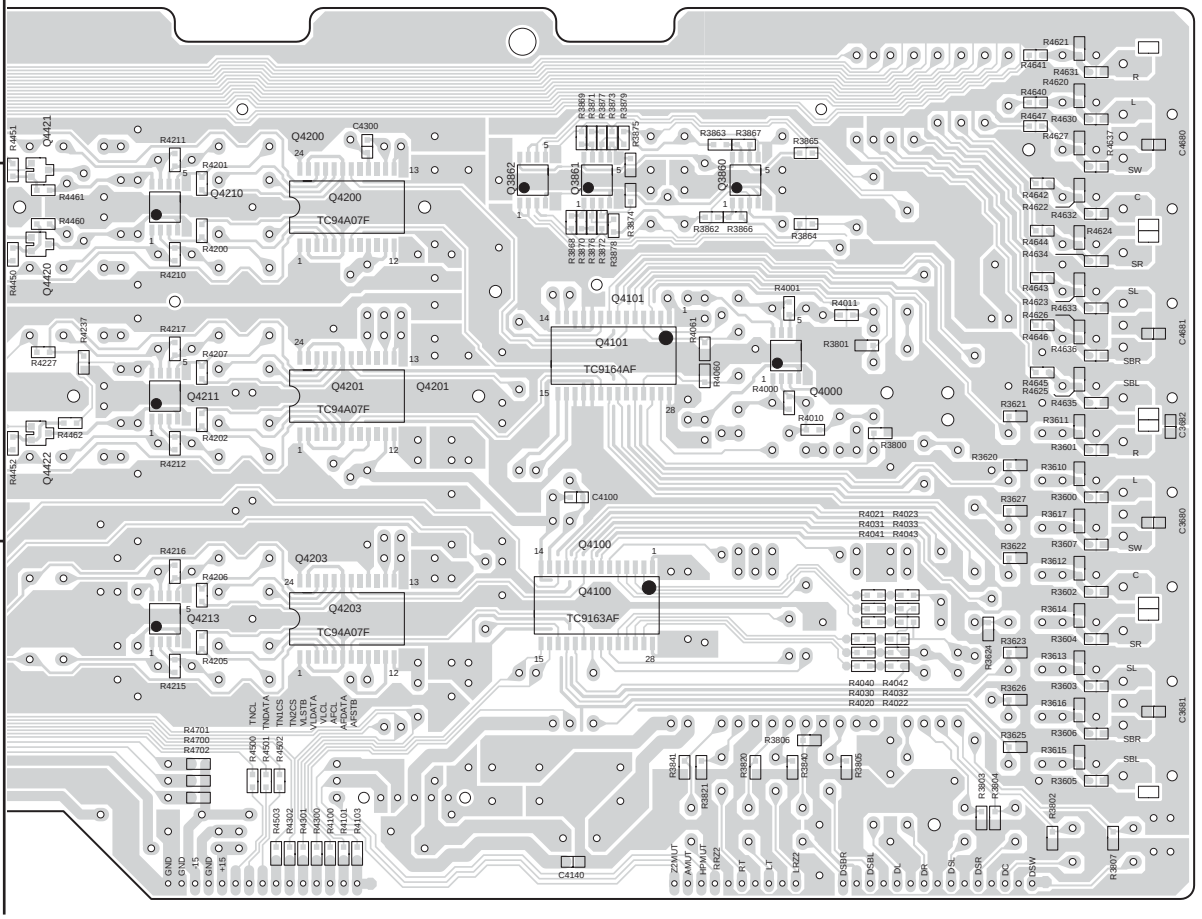
PRINTED CIRCUIT BOARD VIEW FROM SOLDERING SIDE 5-2

U31

PREAMPLIFIER PC BOARD (NAAF-7718)



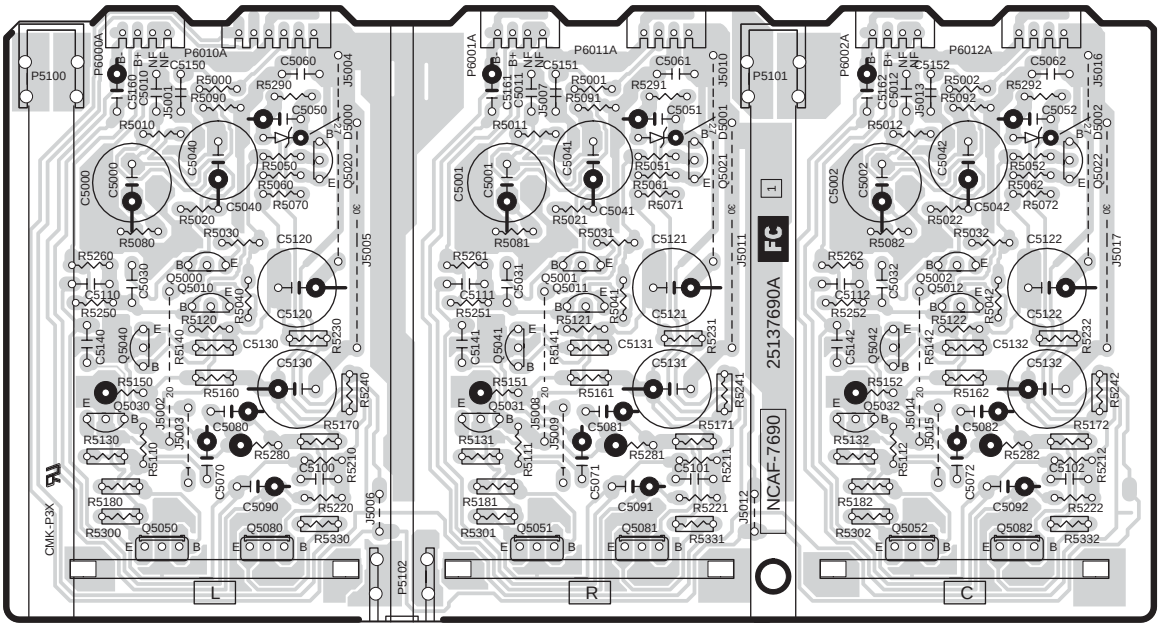
COMPONENT SIDE



SOLDERING SIDE

PRINTED CIRCUIT BOARD VIEW FROM SOLDERING SIDE 6-2

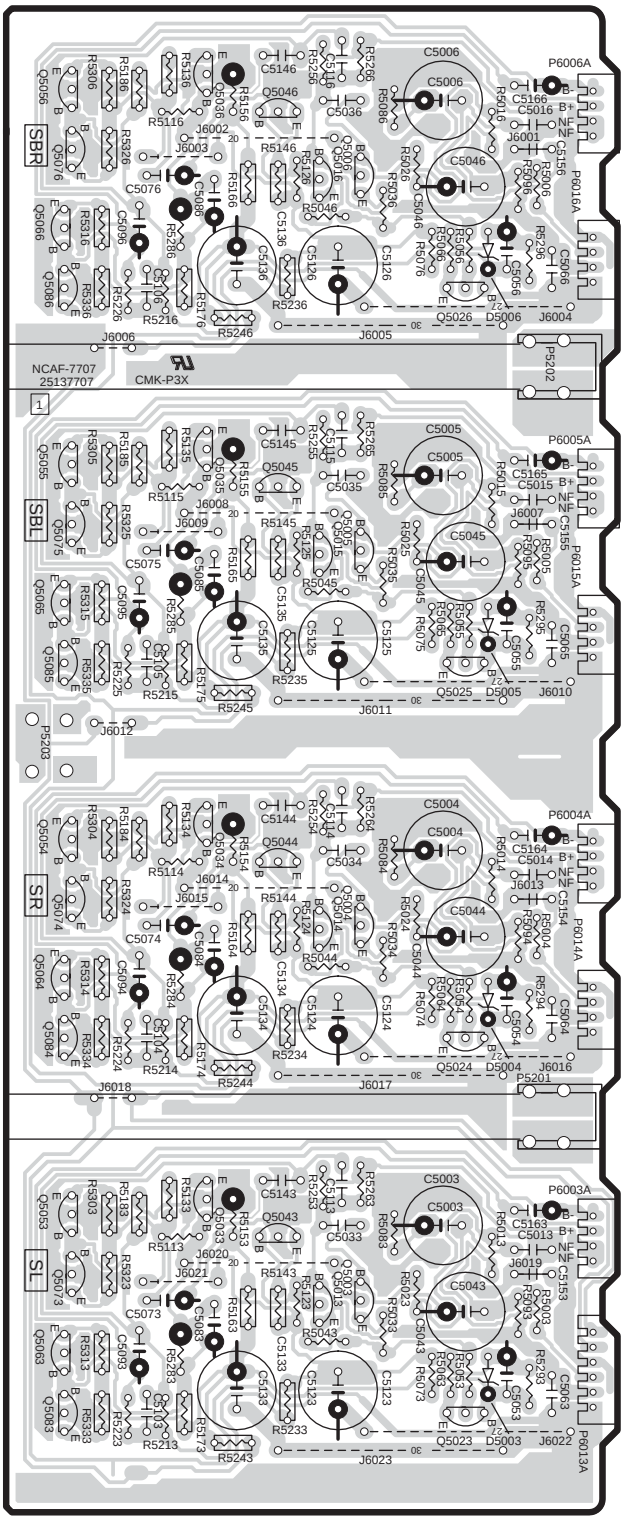
U6



FRONT/CENTER CHANNELS DRIVER AMPLIFIER PC BOARD(NAAF-7690)

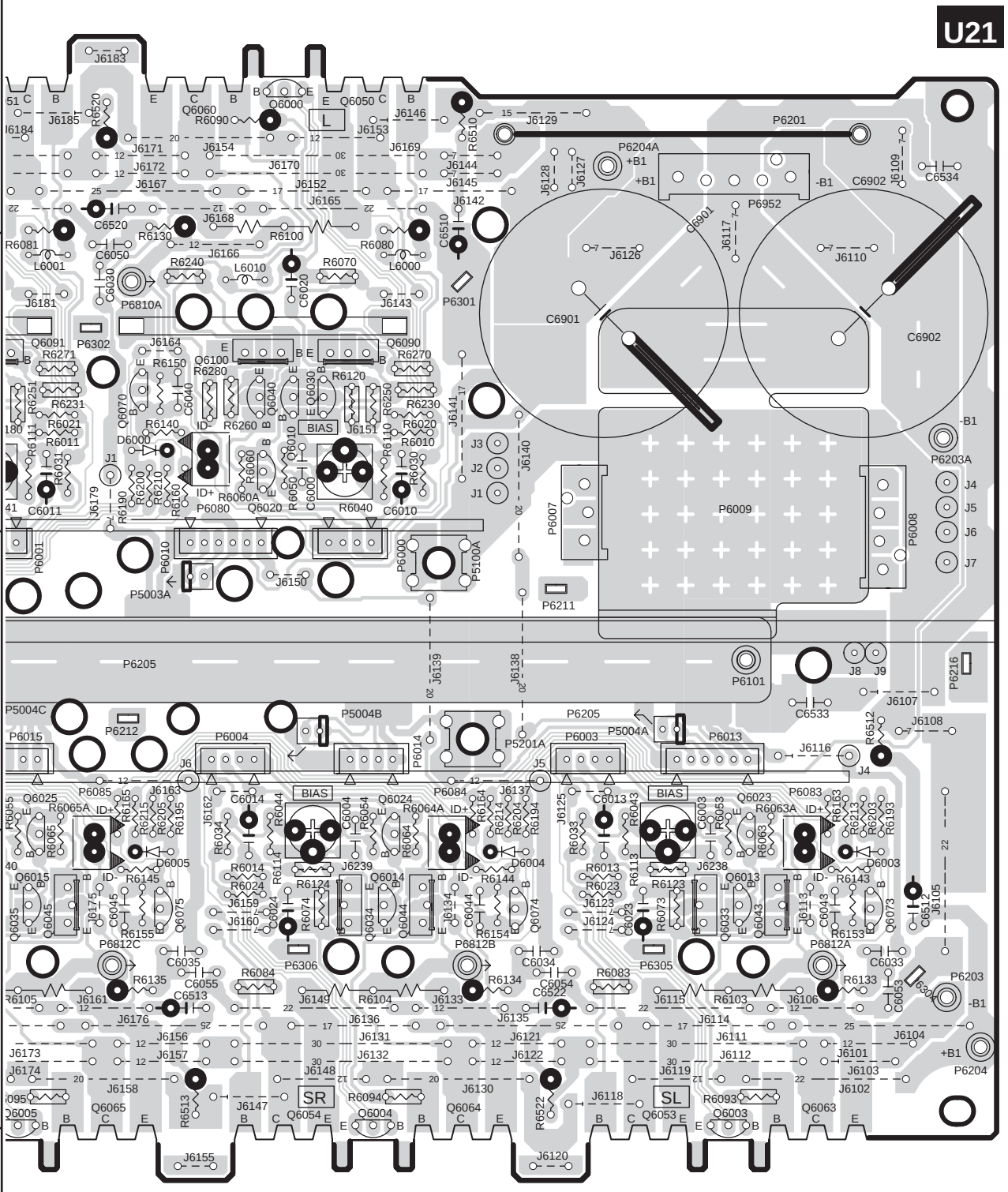
PRINTED CIRCUIT BOARD VIEW FROM SOLDERING SIDE 6-1

U22



SURROUND CHANNEL DRIVER AMPLIFIER PC BOARD(NAAF-7707)

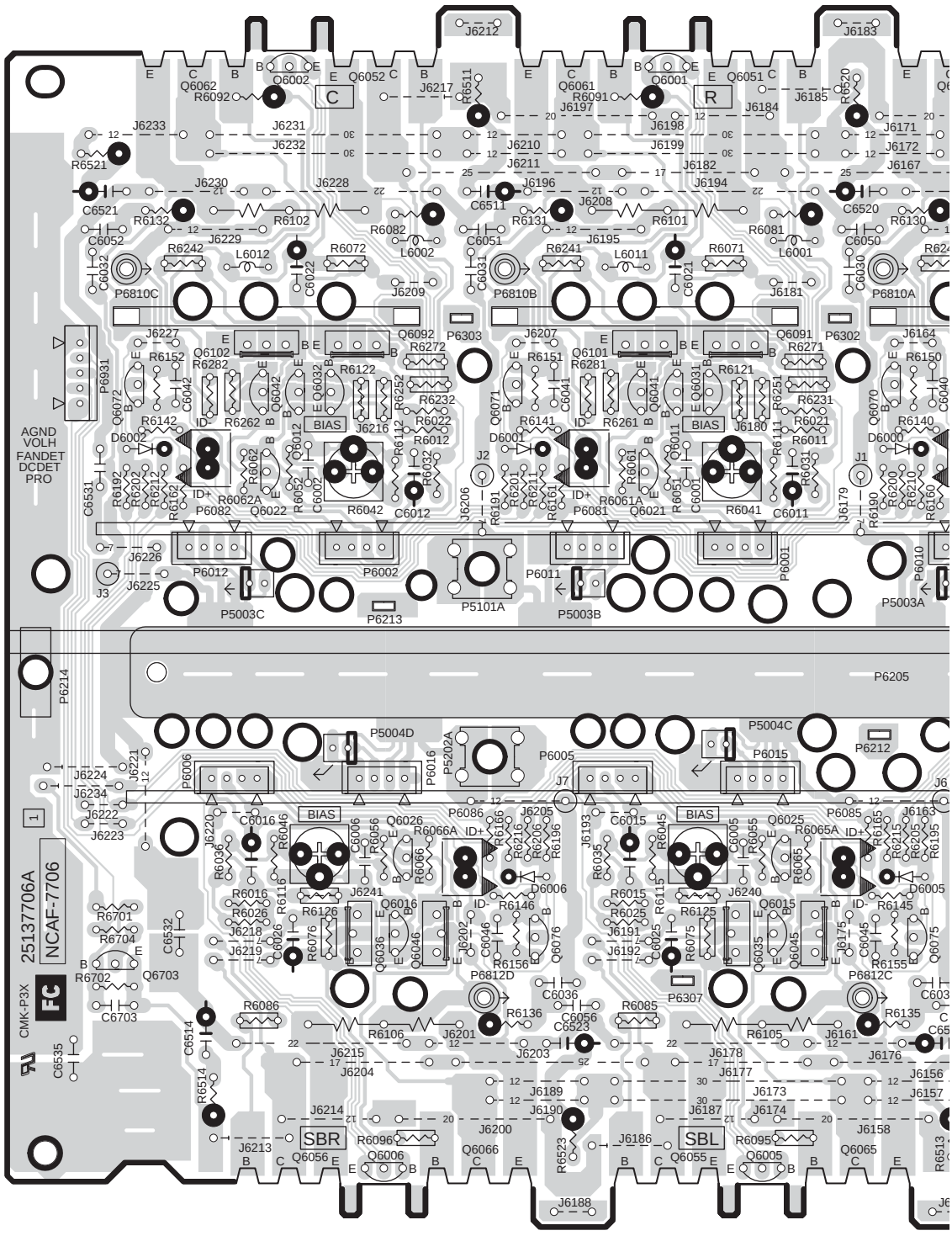
PRINTED CIRCUIT BOARD VIEW FROM SOLDERING SIDE 7



POWER AMPLIFIER PC BOARD(NAAF-7706)

PRINTED CIRCUIT BOARD VIEW FROM SOLDERING SIDE 7

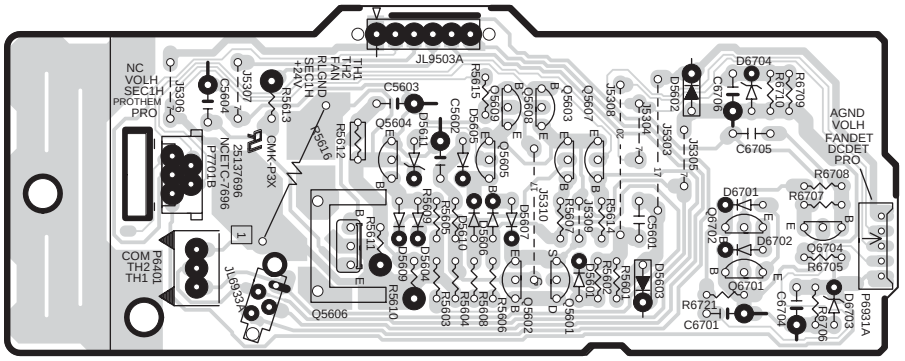
U21



POWER AMPLIFIER PC BOARD(NAAF-7706)

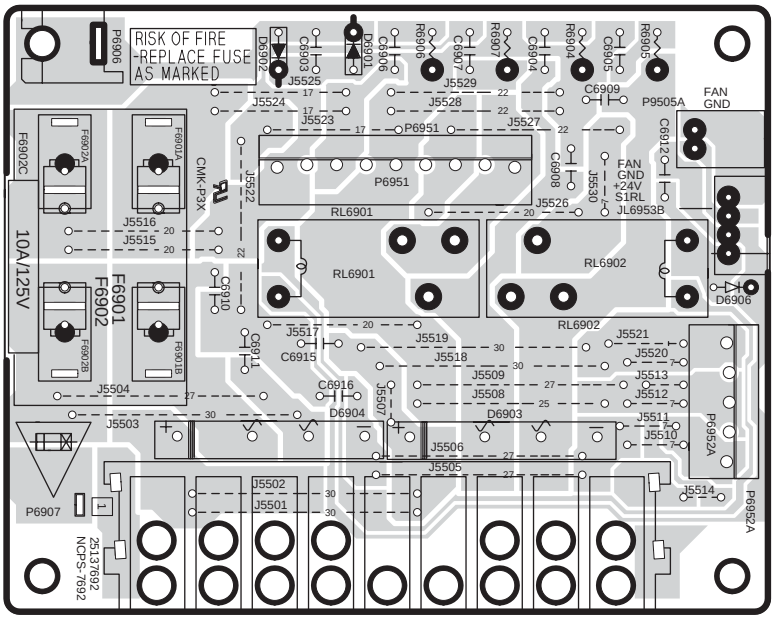
PRINTED CIRCUIT BOARD VIEW FROM SOLDERING SIDE 8-2

U12



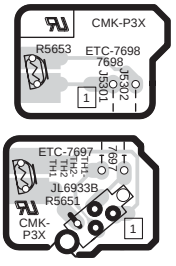
FAN DRIVE CIRCUIT PC BOARD(NAETC-7696)

U8



BIAS SELECTOR RELAY PC BOARD(NAPS-7692)

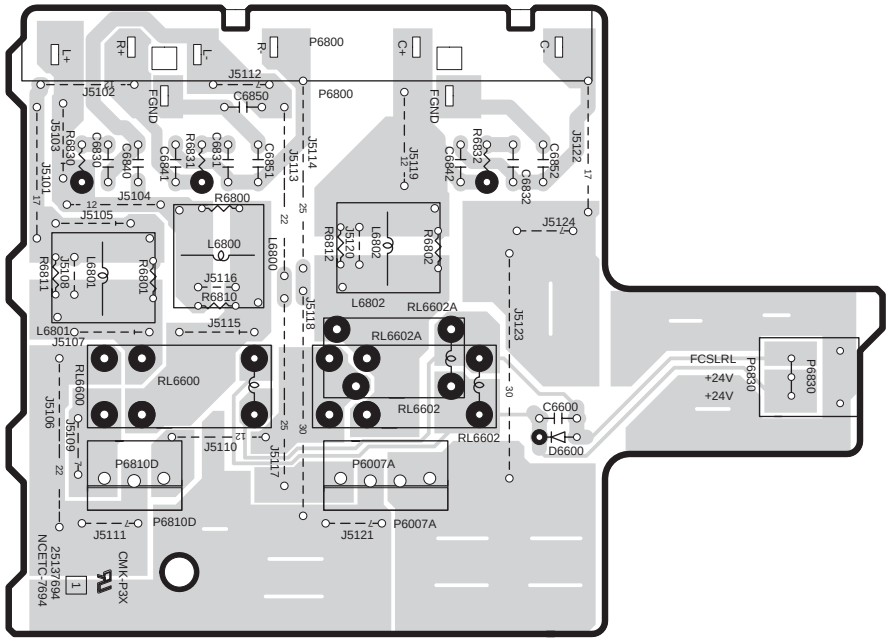
U13



THERMAL DETECTOR PC BOARD(NAETC-7697)

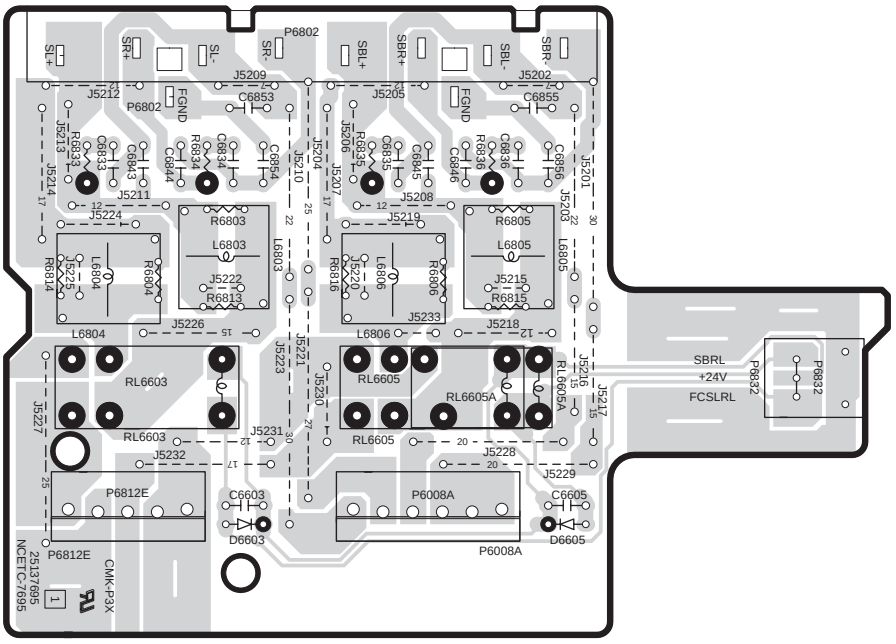
PRINTED CIRCUIT BOARD VIEW FROM SOLDERING SIDE 8-1

U10



FRONT/CENTER CHANNELS SPEAKER TERMINAL PC BOARD(NAETC-7694)

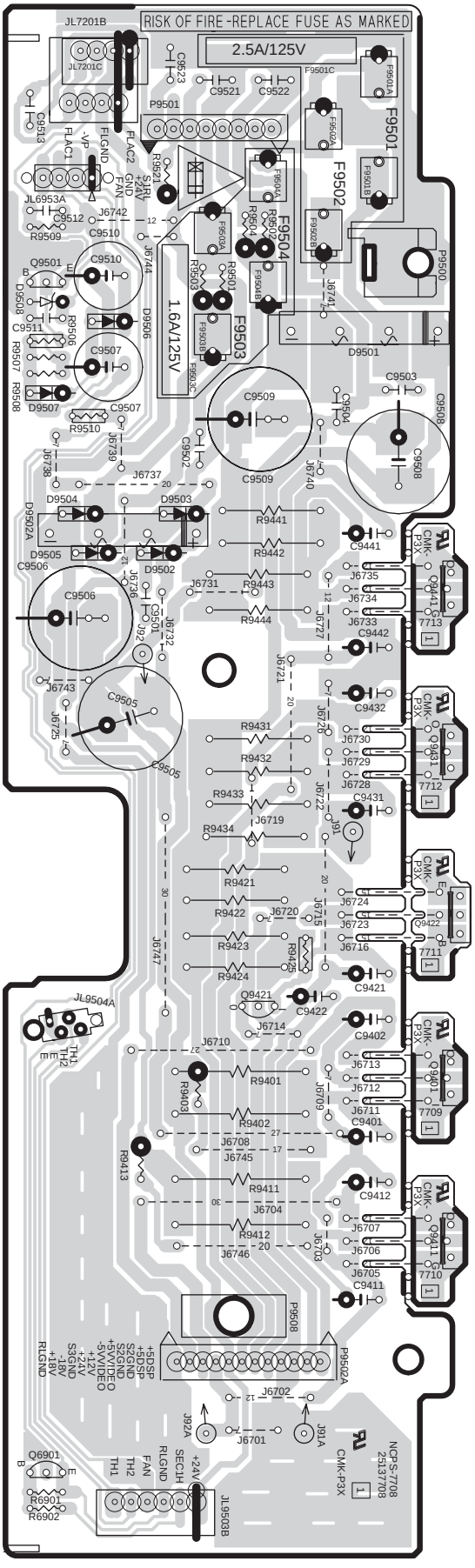
U11



SURROUND CHANNELS SPEAKER TERMINAL PC BOARD(NAETC-7695)

PRINTED CIRCUIT BOARD VIEW FROM SOLDERING SIDE 9-1

U23

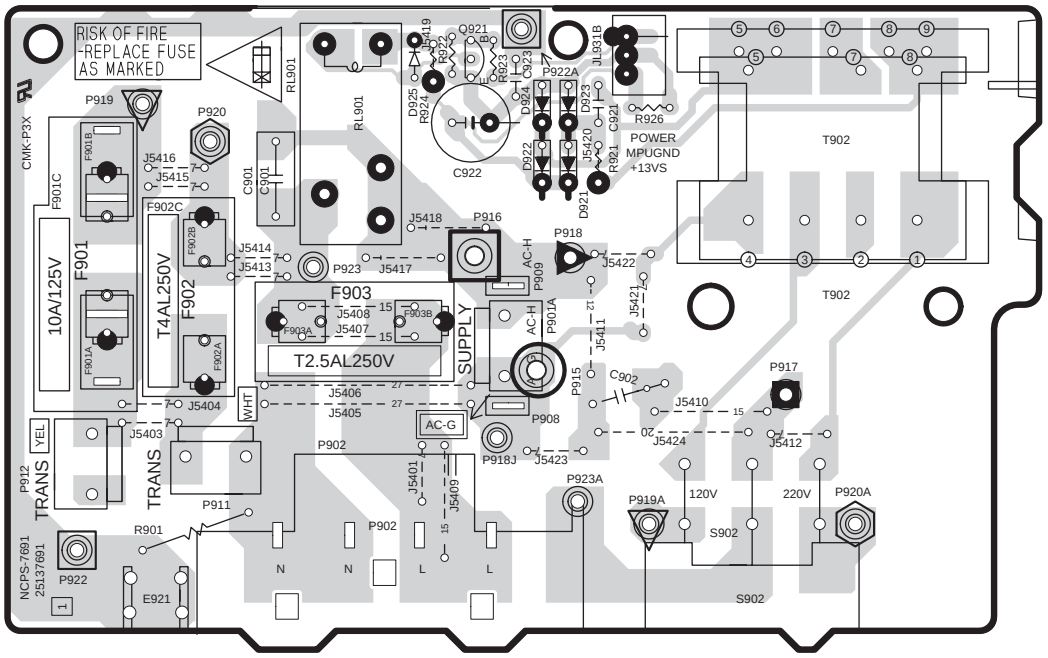


A B C D

1 2 3 4 5

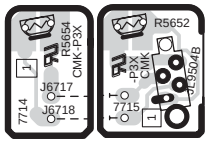
PRINTED CIRCUIT BOARD VIEW 9-2

U7



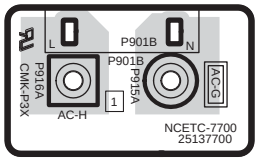
PRIMARY CIRCUIT PC BOARD(NAPS-7691)

U29



THERMAL DETECTOR PC BOARD(NAETC-7714)

U16

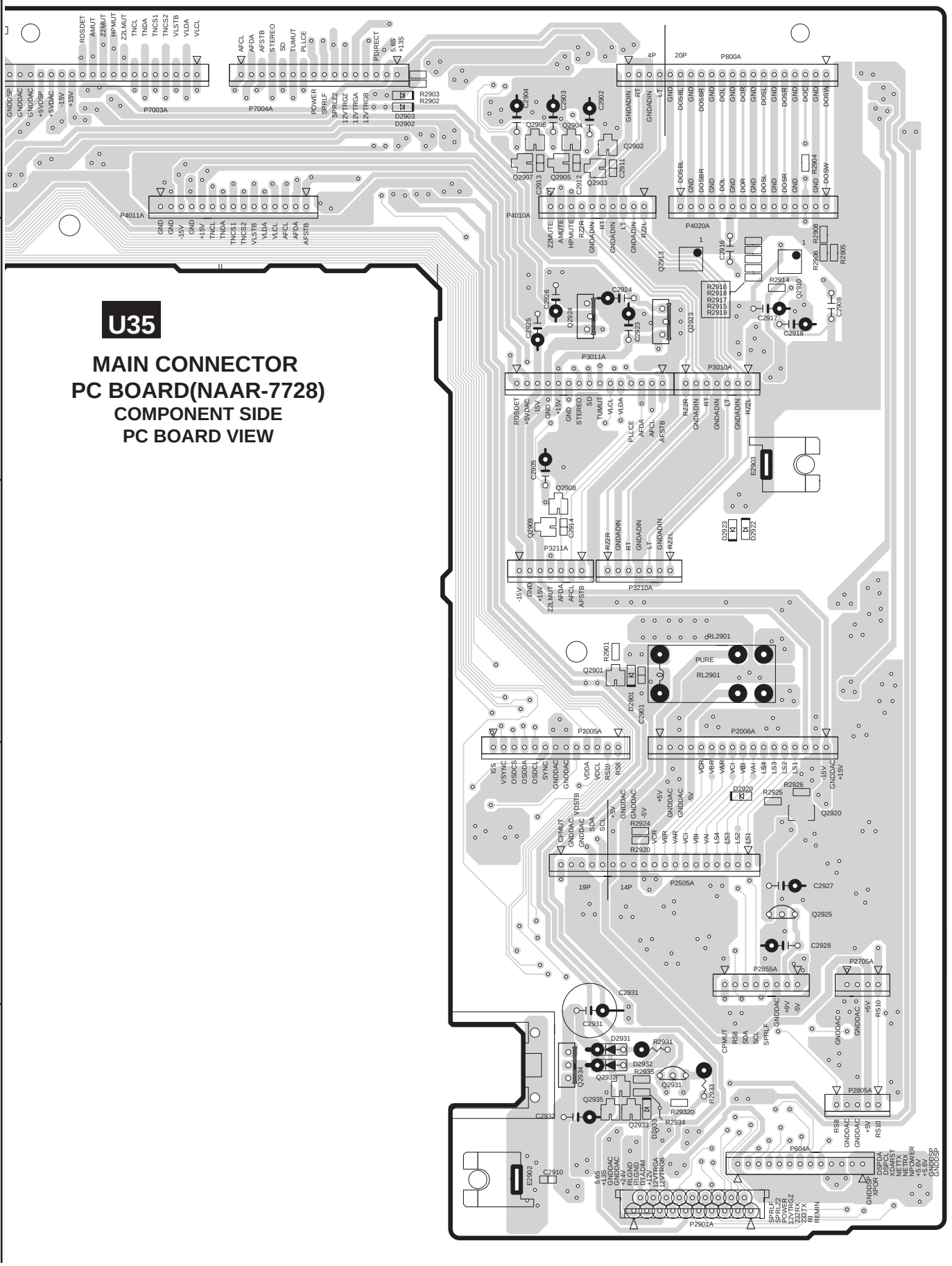


AC INLET TERMINAL PC BOARD(NAETC-7700)

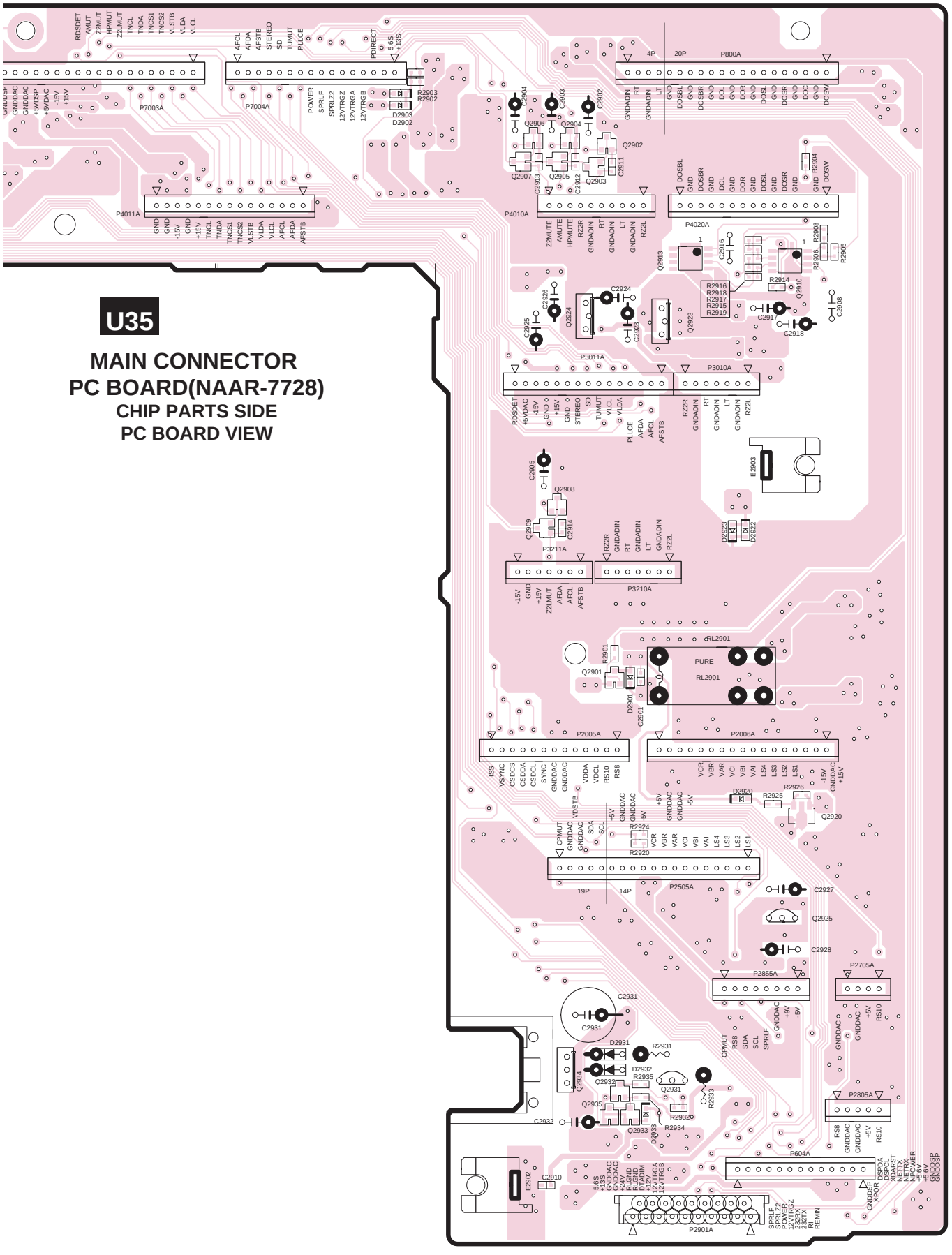
PRINTED CIRCUIT BOARD VIEW 10-4

U35

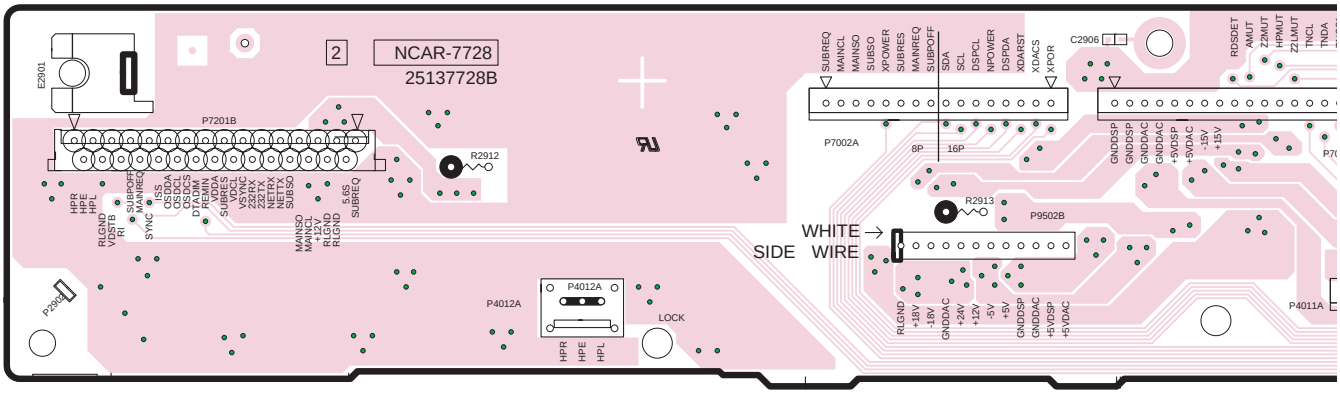
MAIN CONNECTOR
PC BOARD(NAAR-7728)
COMPONENT SIDE
PC BOARD VIEW



PRINTED CIRCUIT BOARD VIEW 10-3

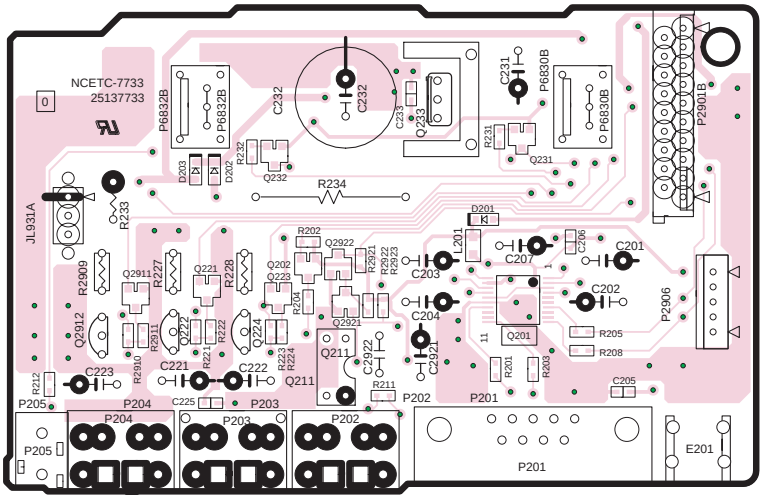


PRINTED CIRCUIT BOARD VIEW 10-2



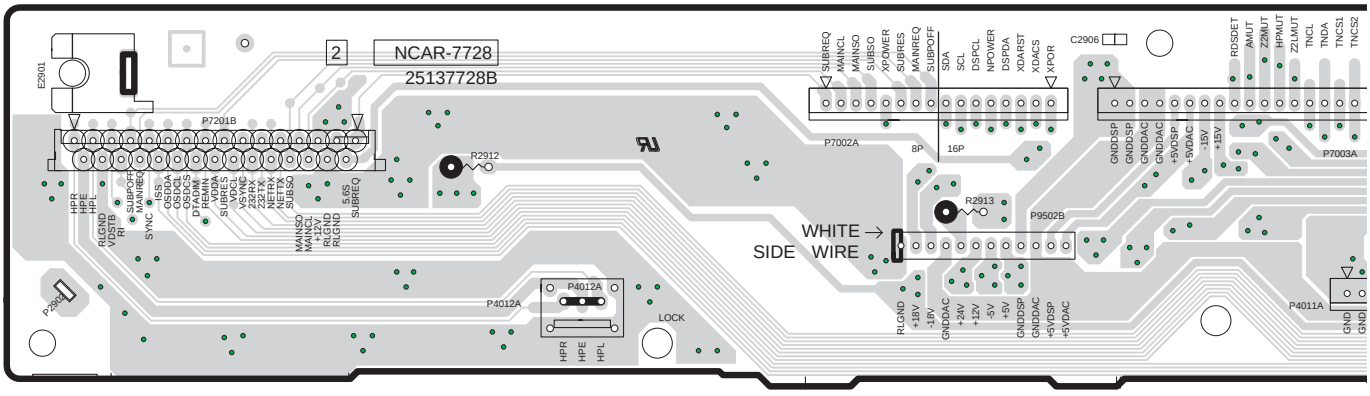
U35

MAIN CONNECTOR
PC BOARD(NAAR-7728)
CHIP PARTS SIDE
PC BOARD VIEW



U39 **RS232 TERMINAL PC BOARD(NAETC-7733)**

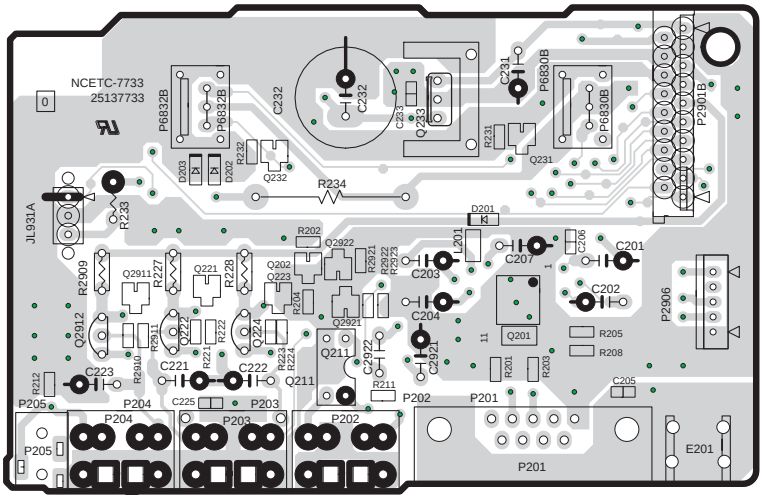
PRINTED CIRCUIT BOARD VIEW 10-1



U35

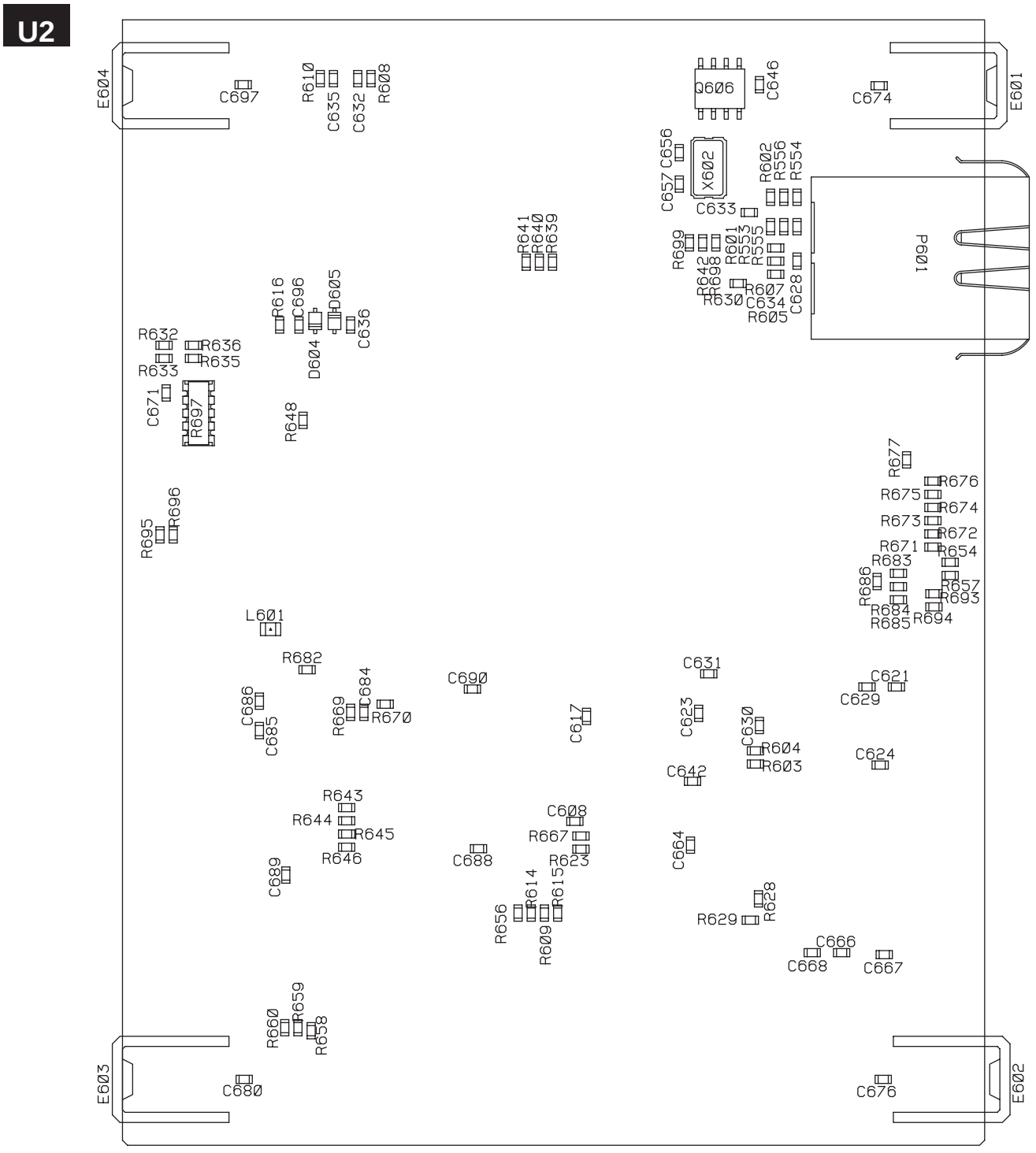
MAIN CONNECTOR PC BOARD(NAAR-7728)

COMPONENT PARTS SIDE PC BOARD VIEW



U39 **RS232 TERMINAL PC BOARD(NAETC-7733)**

PRINTED CIRCUIT BOARD VIEW FROM COMPONENT SIDE 11-2

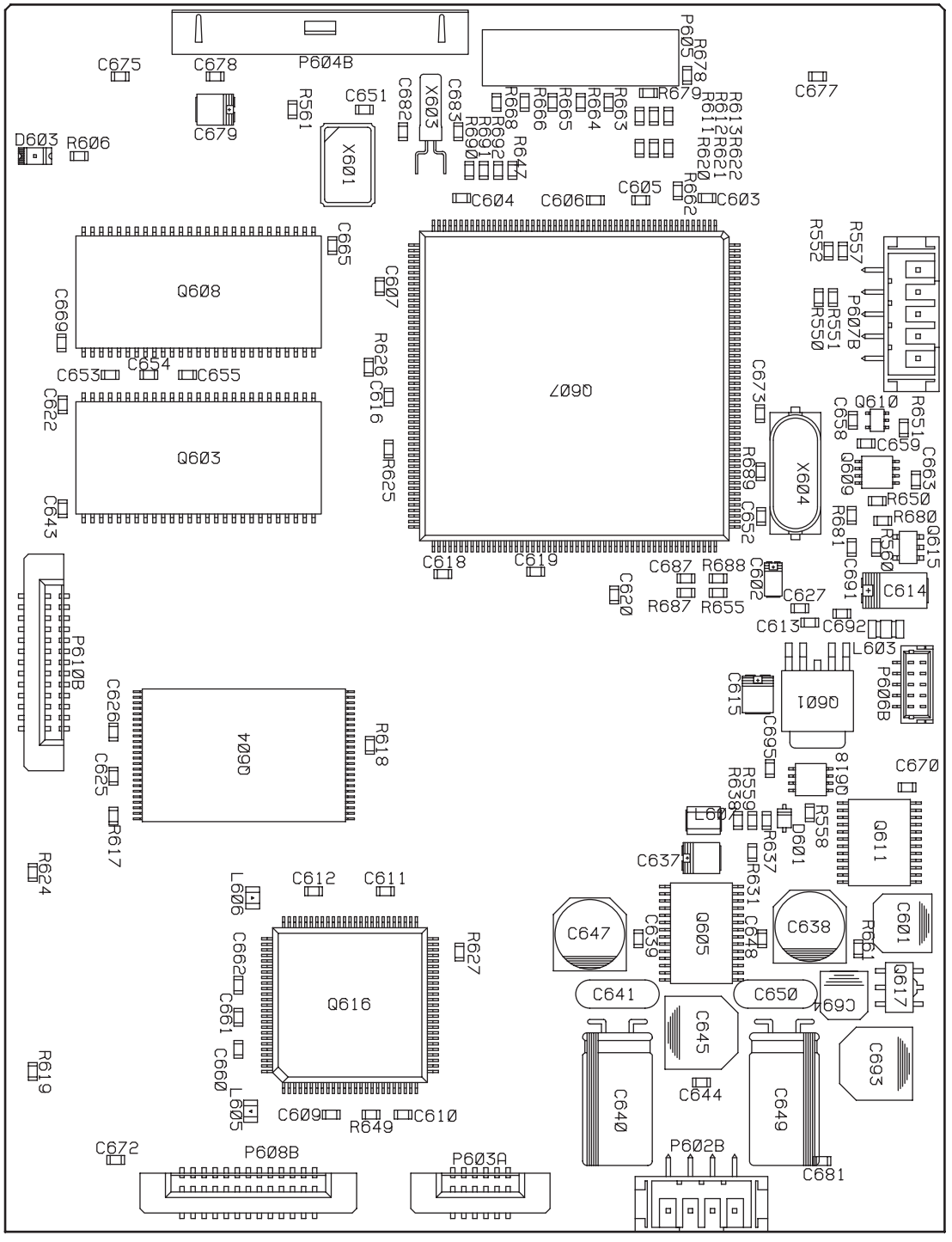


Soldering side

NET-TUNE CIRCUIT PC BOARD(NADG-7662)

PRINTED CIRCUIT BOARD VIEW FROM COMPONENT SIDE 11-1

U2

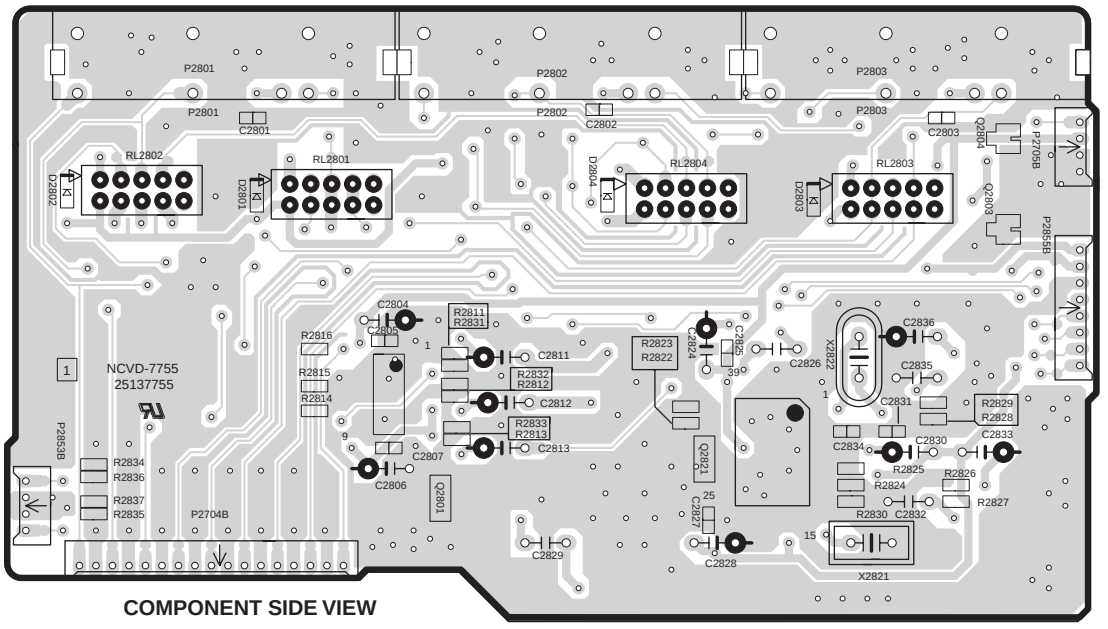


Component side

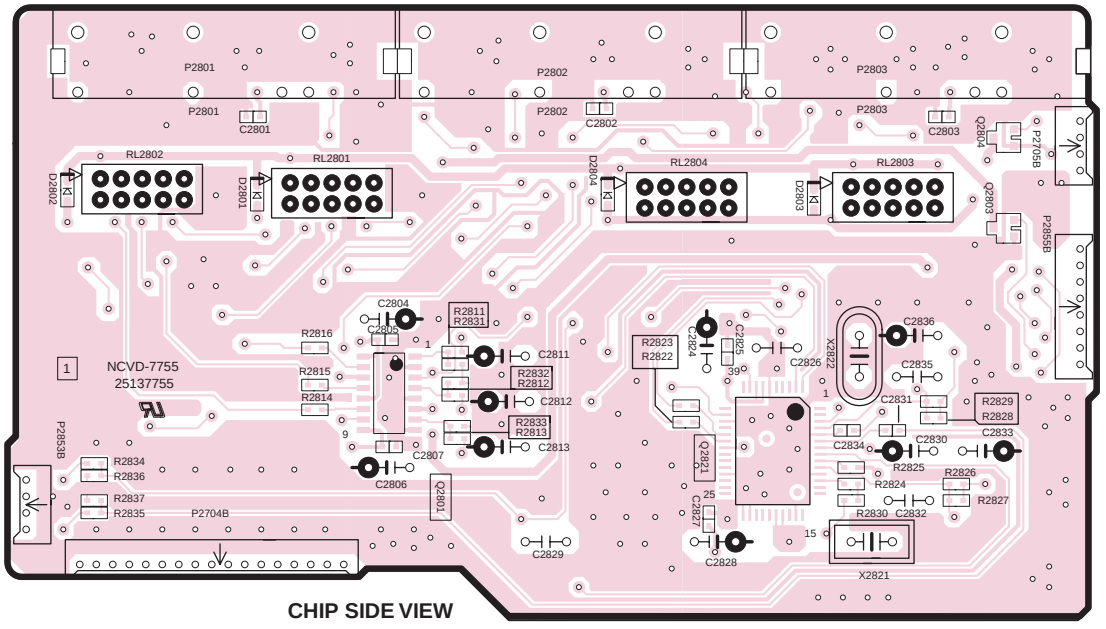
NET-TUNE CIRCUIT PC BOARD(NADG-7662)

PRINTED CIRCUIT BOARD VIEW 13-1 (USA model)

U38

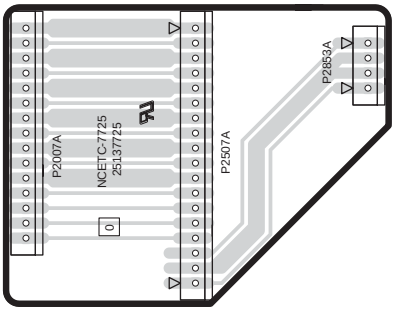


COMPONENT SIDE VIEW



CHIP SIDE VIEW

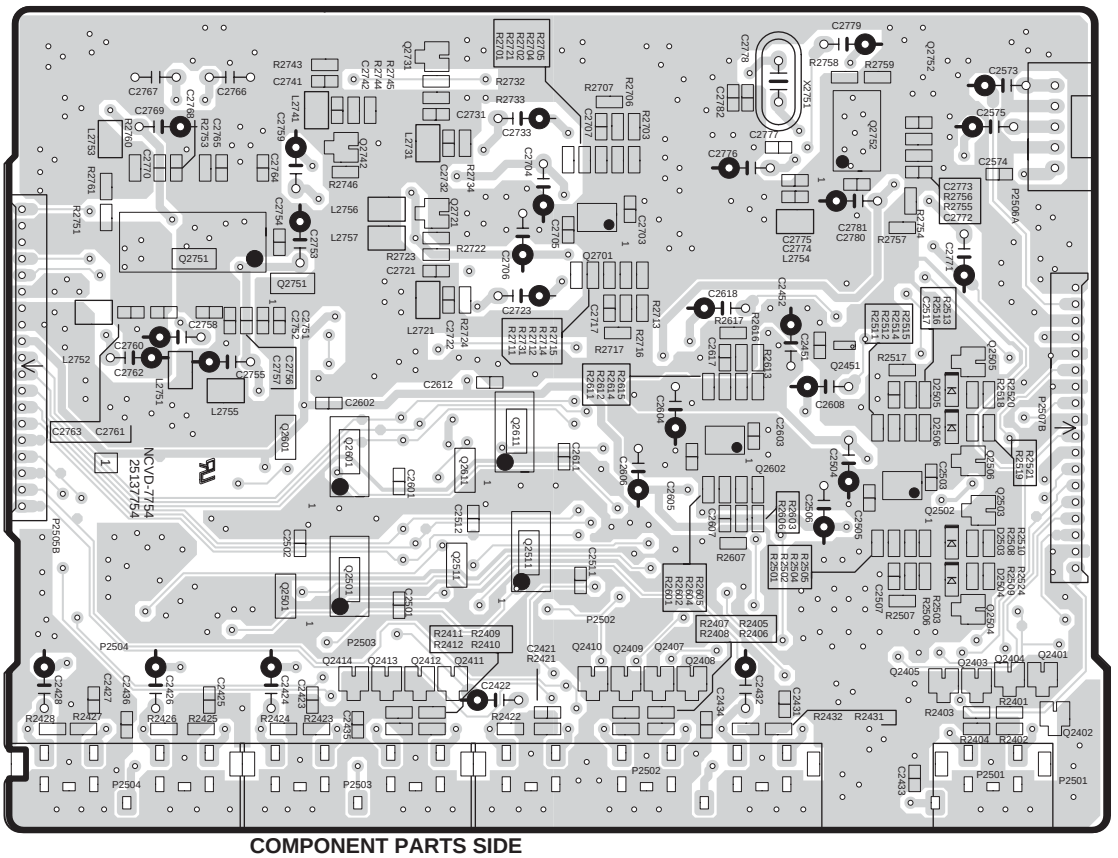
COMPONENT VIDEO PC BOARD(NAVD-7754)



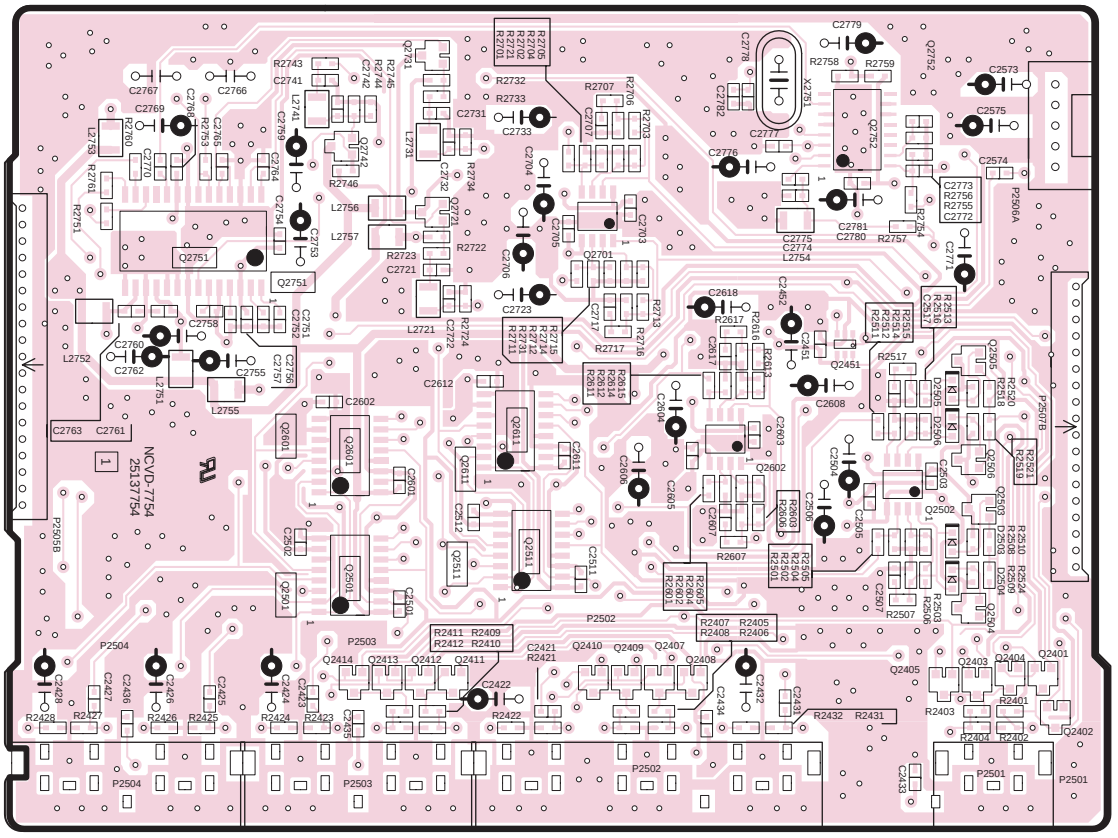
CONNECTOR PC BOARD(NAETC-7725)

PRINTED CIRCUIT BOARD VIEW 13-2 (USA model)

U37



COMPONENT PARTS SIDE

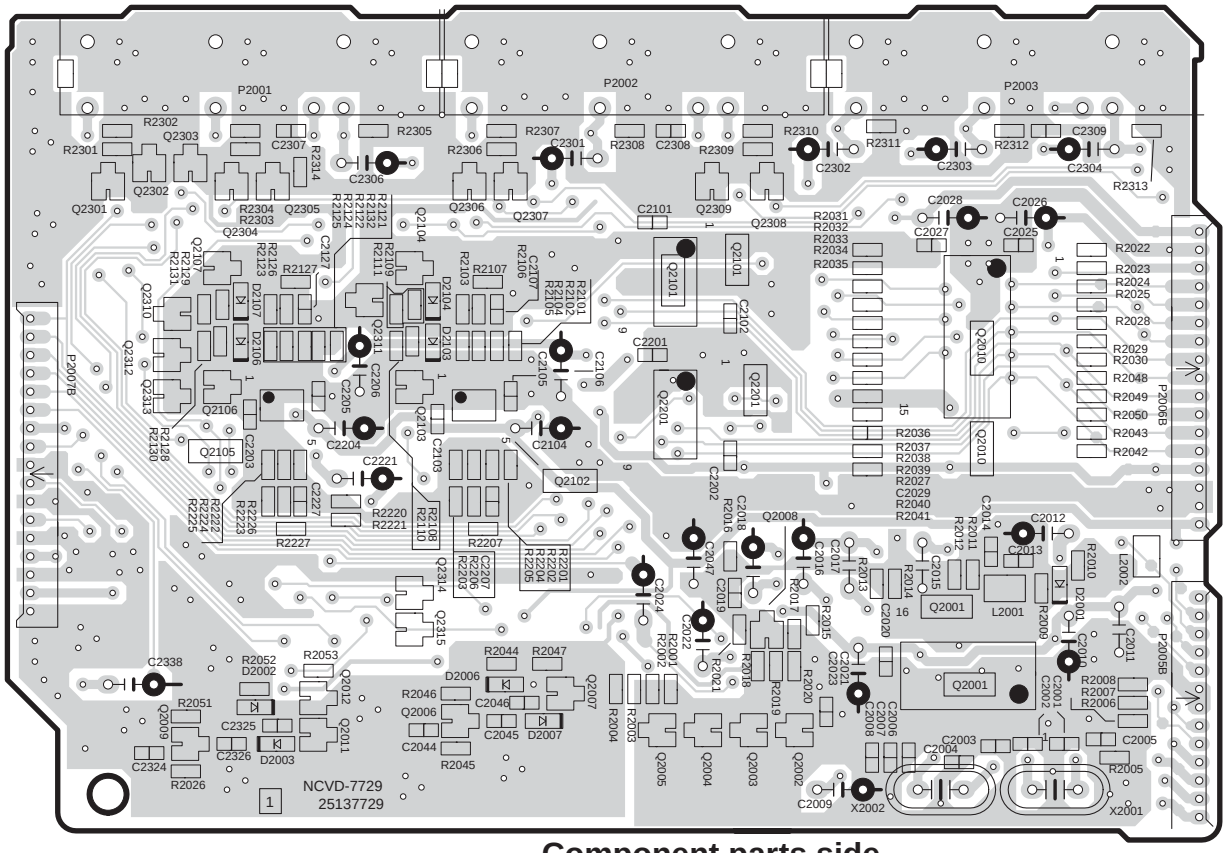


CHIP PARTS SIDE

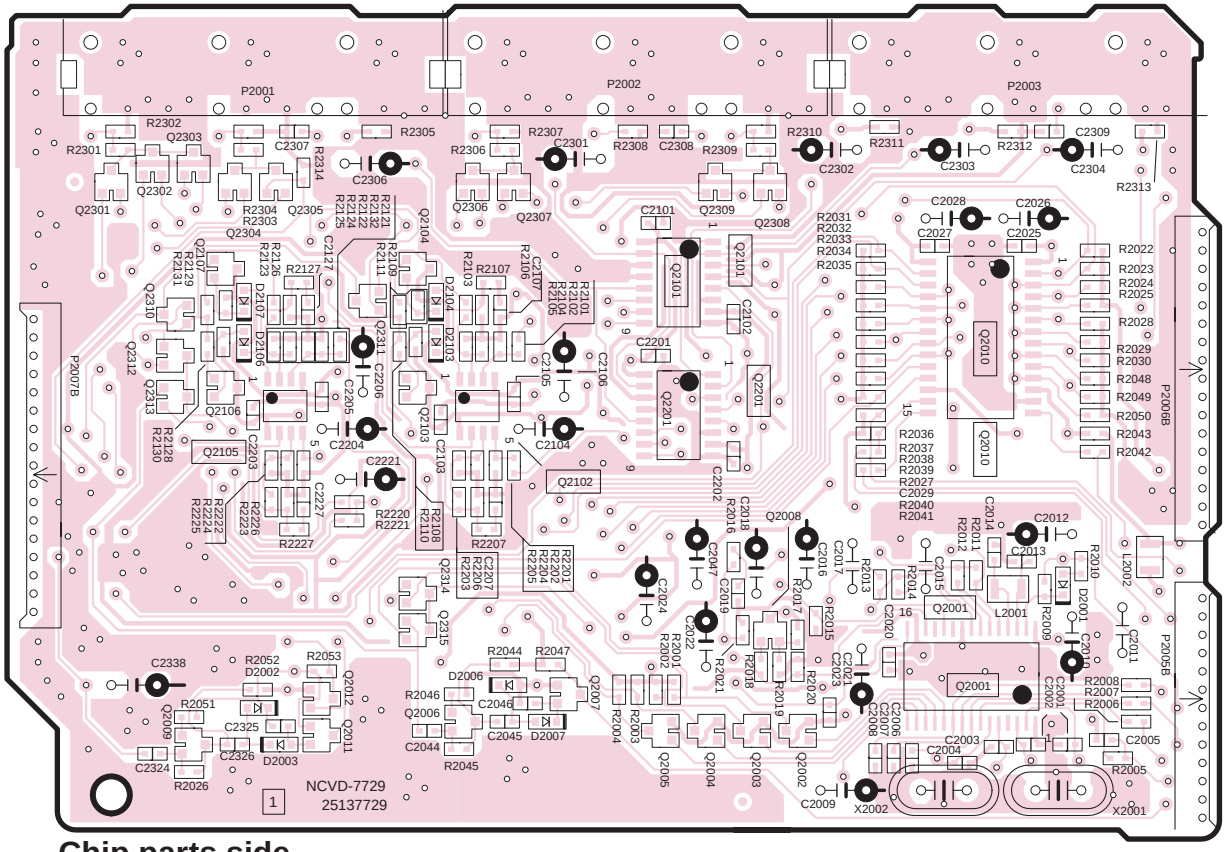
S VIDEO PC BOARD(NAVD-7754)

PRINTED CIRCUIT BOARD VIEW 12-1(Australian model only)

U36



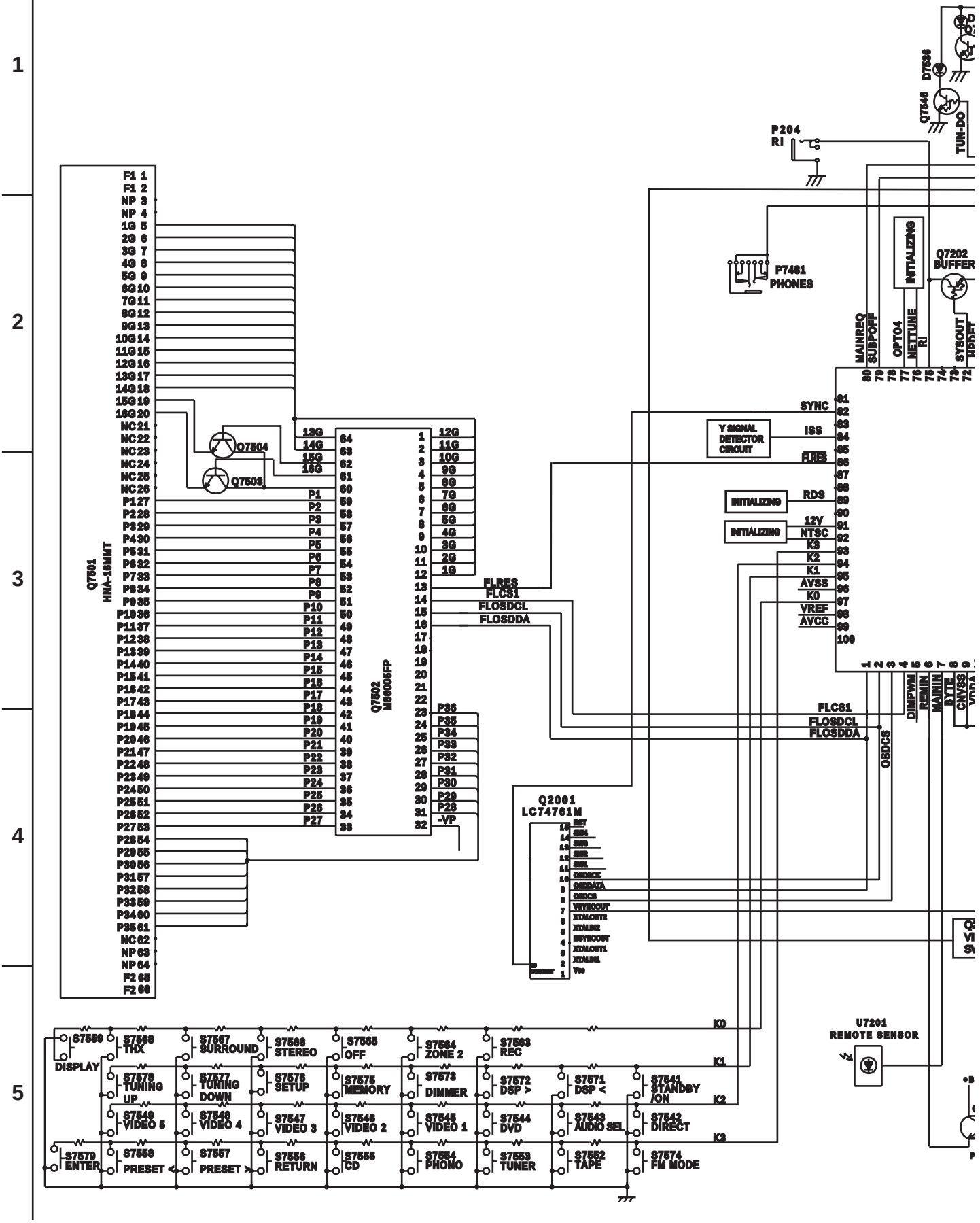
Component parts side



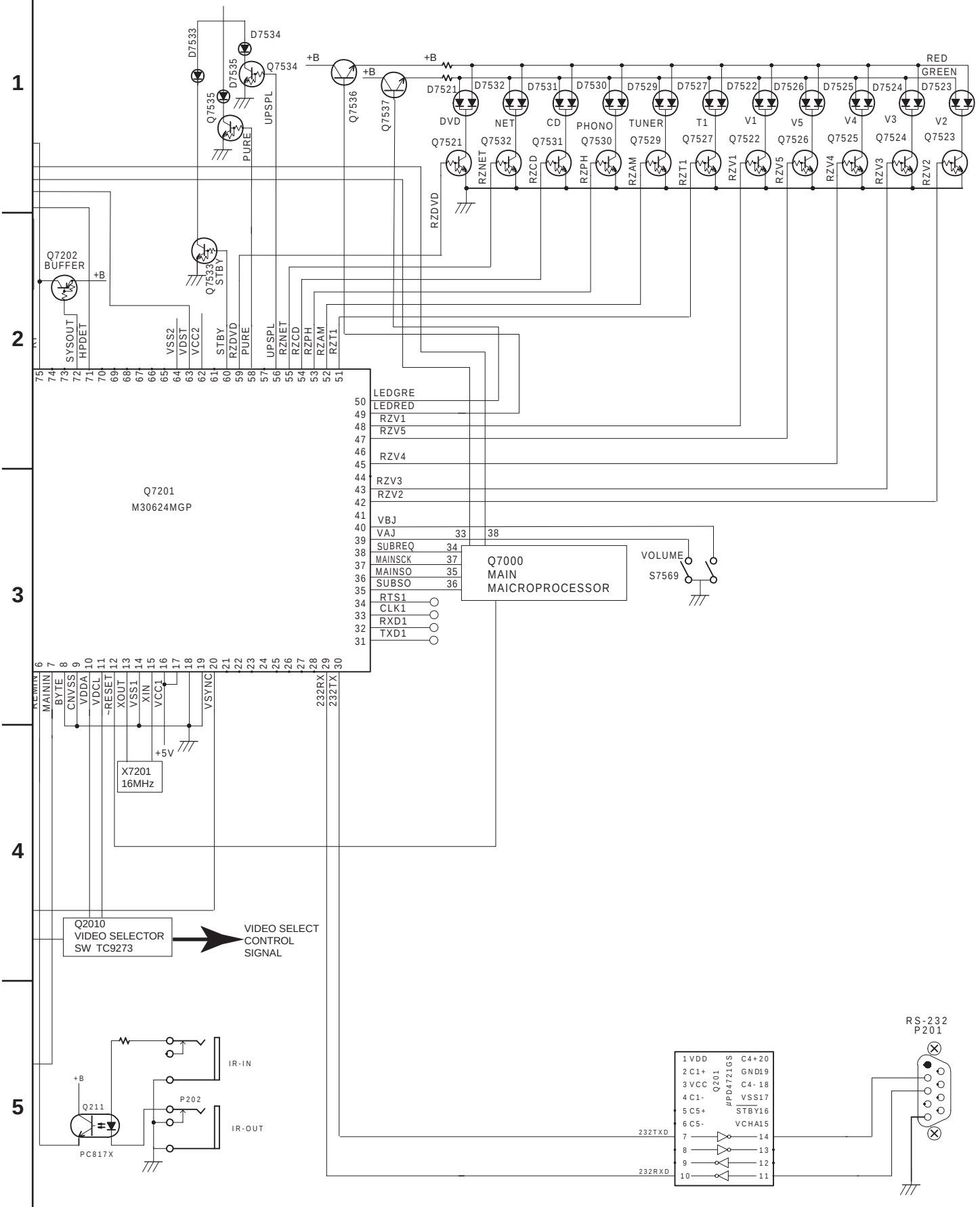
Chip parts side

COMPOSITE VIDEO PC BOARD(NAVD-7729)

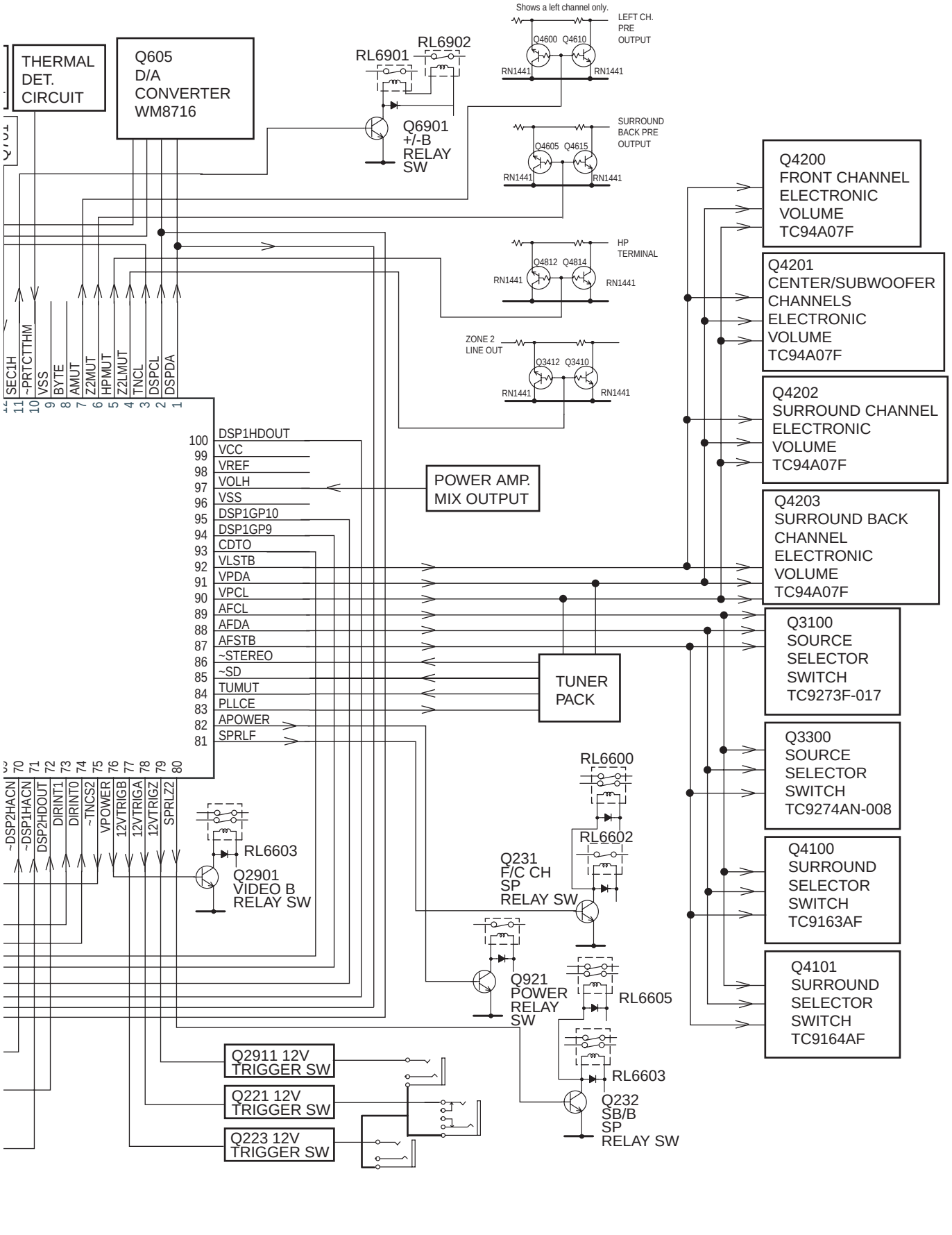
SUB-MICROPROCESSOR-CONNECTION DIAGRAM 1



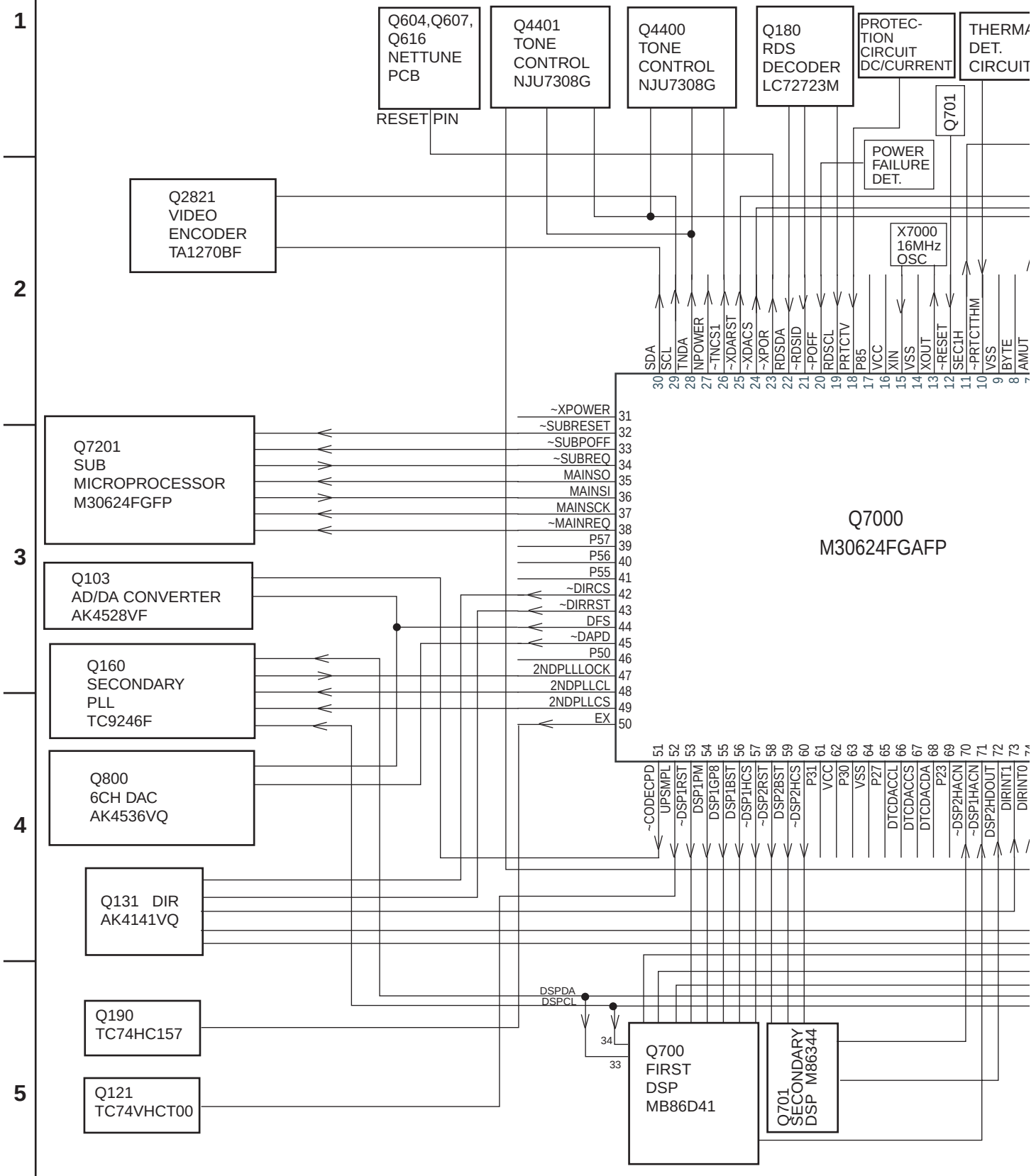
SUB-MICROPROCESSOR-CONNECTION DIAGRAM 2



MAIN MICROPROCESSOR-CONNECTION DIAGRAM 2



MAIN MICROPROCESSOR-CONNECTION DIAGRAM 1



SUBMICROPROCESSOR-TERMINAL DESCRIPTION

No,	Function	I/O	Descriptions
1	FLOSDDA	O	Serial data output pin for FL tube driver and OSD IC.
2	FLOSDCL	O	Serial clock output pin for FL tube driver and OSD IC.
3	OSDCS	O	Chip select output pin for OSD IC
4	FLCS1	O	Chip select output pin for FL tube driver
5	DIMPWM	O	Dimmer output pin. Not used.
6	REMIN	I	Signal input pin from external remote control
7	MAININ	I	Signal input pin from remote control
8	BYTE	I	External data bus width select pin.
9	CNVSS		Power supply pin
10	VDDA	O	Serial data output pin for video function switch IC
11	VDCL	O	Serial clock input pin for video function switch IC
12	~RESET	I	System reset input.
13	XOUT	O	Connect the ceramic oscillator 16MHz.
14	VSS		Ground pin
15	XIN	I	Connect the ceramic oscillator 16MHz.
16	VCC		Power supply pin. Apply 5V.
20	VSYNC	I	Vertical synchronizing signal input pin.
24	PURE	O	Pure audio relay control output pin. Not used.
29	232RX	I	Receiving input pin of RS232C.
30	232TX	O	Sending output pin of RS232C.
31	TXD1	O	Rewrite sending output pin to flash writer.
32	RXD1	I	Rewrite receiving input pin from flash writer.
33	CLK1	I	Rewrite clock input pin from flash writer.
34	RTS1	O	Rewrite response output pin to flash writer.
35	SUBSO	O	Data sending output pin to communicate between microprocessors.
36	MAINSO	I	Data receiving input pin to communicate between microprocessors.
37	MAINCL	I	Clock receiving input pin to communicate between microprocessors.
38	SUBREQ	O	Request signal output pin to communicate between microprocessors.
39	VAJ	I	Pulse signal input terminal A pin from rotary encoder.
40	VBJ	I	Pulse signal input terminal B pin from rotary encoder.
42	RZV2	O	Video 2 indicator output pin.
43	RZV3	O	Video 3 indicator output pin.
45	RZV4	O	Video 4 indicator output pin.
47	RZV5	O	Video 5 indicator output pin.
48	RZV1	O	Video 1 indicator output pin.

No,	Function	I/O	Descriptions
49	LEDRED	O	Power supply control output pin for recording indicator.
50	LEDGRE	O	Power supply control output pin for zone 2 indicator
51	RZT1	O	Tape indicator output pin.
52	RZAM	O	AM indicator output pin.
53	RZFM	O	FM indicator output pin.
54	RZPH	O	Phono indicator output pin.
55	RZCD	O	CD indicator output pin.
56	UPSPL	O	Upsampling frequency indicator control output pin
58	PURE	O	Pure audio indicator output pin.
59	RZDVD	O	DVD indicator output pin.
60	STBY	O	STANDBY/RECEIVED indicator output pin.
62	VCC		Power supply pin. Apply 5V.
63	VDST	O	Strobe output pin for video switch control output pin
64	VSS2		Power supply pin. Connect to ground.
71	HPDET	I	Headphone detect5ion input pin.
72	SYSOUT	O	System code output pin
75	SYSIN	I	System code input pin.
76	AREA1	I	Initializing input pin for band aria.
77	AREA2	I	Initializing input pin for band aria.
79	SUBPOFF	I	Power failure intercept input pin between microprocessors.
80	MAINREQ	I	Request input to communicate data between microprocessors.
82	SYNCDET	I	External synchronizing detection input pin.
84	ISS	I	S video signal detection input pin.
86	FLRES	O	Reset signal output pin to the FL tube driver IC.
89	TUNER	I	Initializing input pin about tuner.
90	VIDEO	I	Initializing input pin about video.
91	ZONE2	I	Initializing input pin about zone 2.
92	12V DIM	I	Initializing input pin about dimmer.
93	K3	I	Operation key connection pin.
94	K2	I	Operation key connection pin.
95	K1	I	Operation key connection pin.
96	VSS		Power supply pin for A/D converter.
97	K0	I	Operation key connection pin.
98	VREF		Reference voltage input pin for A/D converter.
99	AVCC		Power supply pin for A/D converter. Apply 5V.

DTR-8.3

MAIN MICROPROCESSOR-TERMINAL DESCRIPTION

No.	Function	I/O	Description
1	DSPDA	O	Serial data output pin to transfer the data to DSP, DIR, Nettune DAC and Second PLL ICs.
2	DSPCL	O	Serial clock output pin to transfer the data to DSP, DIR and Nettune DAC ICs.
3	TNCL	CLK	Serial clock output pin for the tone control ICs.
4	Z2LMUT	O	Muting control signal output pin for line of zone 2 channel.
5	HPMUT	O	Muting control signal output pin for headphone.
6	Z2MUT	O	Muting control signal output pin for zone 2 channel when the power source is turned on.
7	AMUT	O	Muting control signal output pin of analog section.
8	VSS		External data bus width select pin.
9	VSS		Processor mode select pin
10	~PRTCTTHM	I	Detection input pin for thermal protect.
11	SEC1H	O	Primary voltage select pin for main amplifier.
12	~RESET		System reset input pin
13	XOUT		System clock output pin. Connect 16MHz ceramic resonator between #13 and #15.
14	VSS		Ground pin.
15	XIN		System clock input pin. Connect 16MHz ceramic resonator between #13 and #15.
16	VCC		Power supply pin. Apply 5V.
17		I	Not used.
18	PRTCTV	I	Detection input pin for protection circuit of abnormal voltage and current.
19	RDSCL	I	Serial clock input pin of RDS demodulator.
20	~POFF	I	Power failure detection input pin.
21	~RDSID	I	Identification input pin of RDS demodulator.
22	RDSDA	I	Serial data input pin to transfer RDS demodulator.
23	~XPOR	O	Reset output pin to multi media microprocessor when power is turned on.
24	~XDACS	O	Chip select output pin of DAC for Nettune.
25	~XDARST	O	Reset signal output pin of DAC for Nettune.
26	~TNCS1	O	Chip select output pin for tone control IC of front channel.
27	NPOWER	O	Power supply control output pin of audio circuit.
28	TNDA	O	Serial data output pin to tone control IC.
29	IICSCL	O	Serial clock output pin to Y/C, Component separation IC.
30	IICSDA	O	Serial data output pin to Y/C, Component separation IC.
31	~XPOWER	O	Power supply control output pin. Not used.
32	~SUBRESET	O	Reset signal output pin for submicroprocessor.
33	~SUBPOFF	O	Power off output pin to submicroprocessor
34	~SUBREQ	I	Transfer request signal input pin for submicroprocessor.
35	MAINSO	O	Serial data output pin to transfer data between main and submicroprocessor.
36	MAINSI	I	Serial data input pin to transfer data between main and submicroprocessor.
37	MAINSCK	O	Serial clock output pin to transfer data between main and submicroprocessor.
38	~MAINREQ	O	Request signal output pin to transfer data between main and submicroprocessor.
39		O	Not used.
40	(2ndBTACT)	O	Not used.
41		I	Mode setting pin to write the program on flash microprocessor.
42	~DIRCS	O	Chip select output pin to DIR(AK4114) IC.
43	~DIRRST	O	Reset output pin to DIR IC.
44	DFS	O	DFS output pin of DAC and CODEC ICs.
45	~DAPD	O	Power down output pin of DAC.
46		I	Write mode setting pin of flash microprocessor.
47	K	I	Lock input pin of second PLL IC.
48	2NDPLLCL	O	Clock output pin to second PLL IC.
49	2NDPLLCS	O	Chip select output pin of second PLL IC.
50	EX	O	Input select output pin of nettune.

No.	Function	I/O	Description
51	~CODECPD	O	Power down output pin of CODEC IC.
52	UPSMPL	O	Clock select output pin for up-sampling.
53	~DSP1RST	O	Reset output pin of first DSP IC.
54	DSP1PM	O	PLL initializing output pin of first DSP IC.
55	DSP1GP8	O	PCM or Non PCM information output pin of first DSP IC.
56	DSP1BST	O	Host I/F bootstrap output pin of first DSP IC.
57	~DSP1HCS	O	Host I/F chip select output pin of first DSP IC.
58	~DSP2RST	O	Second DSP reset output pin.
59	DSP2BST	O	Host I/F bootstrap output pin of second DSP IC.
60	~DSP2HCS	O	Host I/F chip select output pin of second DSP IC.
61	(2ndBOOT)	O	"L" fixed output pin.
62	VCC		Power supply pin. Apply +5V.
63	(2ndPAGESE	O	"H" fixed output pin.
64	VSS		Power supply pin. Ground
65	(HPAGE)	O	"L" fixed output pin.
66	DTCDACCL	O	Clock output pin for DAC of DTC.D
67	DTCDACCS	O	Chip select output pin for DAC of DTC.D
68	DTCDACDA	O	data output pin for DAC of DTC.D
69	(2ndGP10)	O	"L" fixed output pin.
70	~DSP2HACN	I	Host I/F acknowledgement input pin of second DSP.2
71	~DSP1HACN	I	Host I/F acknowledgement input pin of first DSP.1.
72	DSP2HDOUT	I	Host I/F serial data output pin to second DSP IC.
73	DIRINT1	I	INT 1 input pin of DIR IC.
74	DIRINT0	I	INT 0 input pin of DIR IC.
75	~TNCS2	O	Chip select output pin to tone control IC.
76	VPOWER	O	Power supply relay control output pin of video circuit.
77	12VTRGB	O	12V trigger output pin B.
78	12VTRGA	O	12V trigger output pin A.
79	12VTRGZ	O	12V trigger output pin ZONE 2.
80	SPRLZ2	O	Speaker relay control output pin for Zone 2.
81	SPRLF	O	Speaker relay control output pin for all channels.
82	APOWER	O	Power supply relay control output pin of audio circuit.
83	PLLCE	O	Chip enable output pin to PLL IC.
84	TUMUT	O	Muting control output pin for tuner section.
85	~SD	I	Detection input pin for signal strength.
86	~STEREO	I	Detection input pin for FM stereo broadcast.
87	AFSTB	O	Strobe signal output pin of analog function switch ICs.
88	AFDA	O	Serial data output pin for function switch ICs.
89	AFCL	O	Serial clock output pin for function switch ICs.
90	VPCL	O	Serial clock output pin for electric volume and PLL ICs.
91	VPDA	O	Serial data output pin for electric volume and PLL ICs.
92	VLSTB	O	Strobe output pin of electrical volume.
93	CDT0	I	Serial data input pin for DSP and DIR ICs.
94	DSP1GP9	I	Permission information input pin to read bit stream information of first DSP.
95	DSP1GP10	I	INTREQ input pin of first DSP IC.
96	VSS		Ground pin for A/D converter.
97	VOLH	I	Input pin to measure the output voltage of main amplifier.
98	VREF		Reference voltage input pin for A/D converter.
99	VCC		Power supply pin for A/D converter.
100	DSP1HDOUT	I	Serial data output pin of host I/F of first DSP.

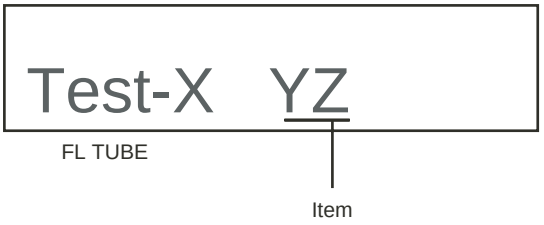
ADJUSTMENT AND CONFIRMATION PROCEDURES 3

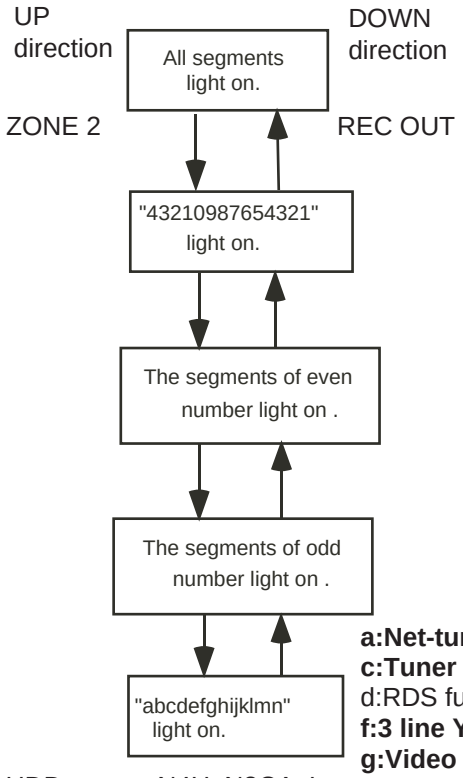
Test Mode

1. Turn POWER button on.
2. Press and hold down CD button, then press DISPLAY and STANDBY/ON buttons.
3. After "TEST " on the FL tube is displayed, press CD button to set the unit to the test mode of FL tube.

Note: VIDEO 1:TEST-1 VIDEO 2 :TEST-2
VIDEO 3 :TEST-3 VIDEO 4:TEST-4

Test mode of FL tube
ZONE 2....UP
REC OUT.....DOWN





UDD N4U_N3CA_L__
UPA N4E_P_ A_L__

Confirmation of voltage sensor

1. Set the unit to TEST-3-4.
2. Apply the signal 1kHz, -15dBV to the MULTI-CH input. Confirm that the FM STEREO is displayed. Confirm the all channels except SUBWOFFER.
3. When connect the resistor 1.2 kohm/1 W between the terminals COM and TH2 of P6401, confirm that "THX" light on.
   Note: No input signal.
4. When change set the unit to "TEST-3-05,confirm that the speaker relays of RL6901 and RL6902 turn off.
   Note: No input signal.

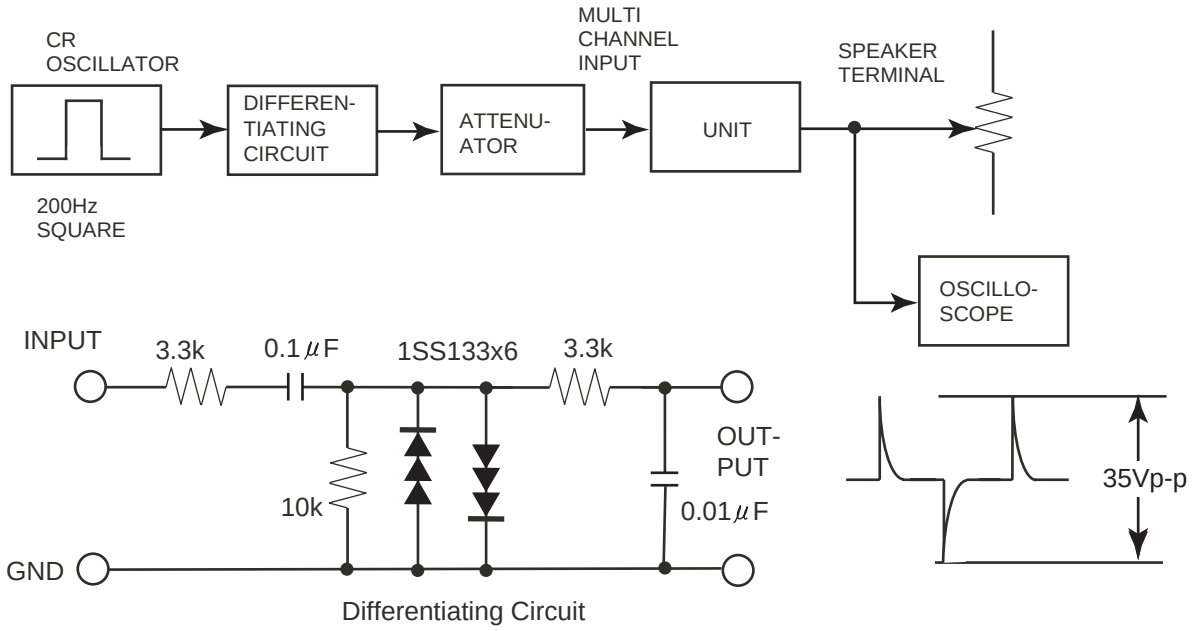
a:Net-tune function "N":avaiable b:Optical input 4 "4":avaiable
c:Tuner aria "U":USA and Canad "E":Europe "W":Worldiwde " _ ":Japan
d:RDS function "R":avaiable **e:Video format "P":PAL/NTSC auto "N":NTSC**
f:3 line Y/C separation function "3":avaiable
g:Video converer function: "C":avaiable
h:12V trigger function "A":A/B/Zone2 "Z":Zone 2 only
i:Dimmer interlock function "D":avaiable
j:Zone 2 Lineout function "L":avaiable
k:AAC function "A":avaiable
l: Dolby headphone function "H":avaiable m: THX Ultra2:"U":avaiable n:No use
Note: All functions " ": No avaiable AAC: Japanese model only

Press POWER button
to finish the test mode of FL tube.

ADJUSTMENT AND CONFIRMATION PROCEDURES 2

3. Confirmation of Current detection circuit

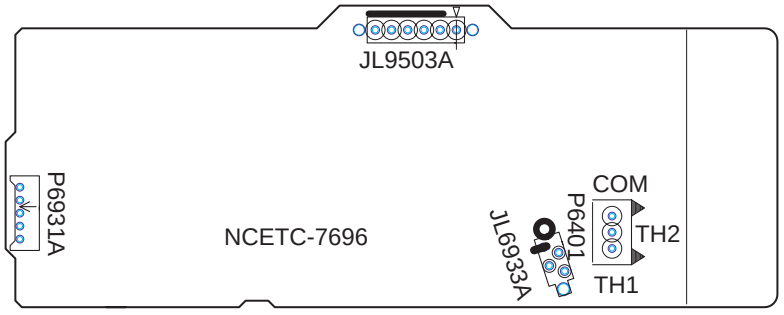
Set the unit to "TEST-1-00".
Connect the differentiating circuit and apply the 200Hz square signal to MULTI CHANNEL INPUT terminal.
of each channel.
Adjust the attenuator or Volume so that the output level becomes 35V p-p.
Confirm that the speaker relay does not turn OFF when a 3.0 ohm load is connected.
Confirm that the speaker relay turns OFF when a 1.5 ohm load is connected.



Differentiating Circuit

4. Confirmation of fan

Set the unit to "TEST-1-00".
Apply the 1kHz -30dBV signal to the left channel of MULTI-CH terminal with no load.
Confirm that the fan rotates slow speed after few seconds.
Confirm the operation above at all channels.
Connect the 1.2 kohm/1W resistor between terminals COM and TH-1 of P6401 with no input signal.
Confirm that the fan rotates slow speed after few seconds.
Next apply the 1kHz -30dBV signal to the left channel of MULTI-CH terminal with no load.
Confirm that the fan rotates high speed after few seconds.
Connect the 1.2 kohm/1W resistors between terminals COM-TH-1 and COM-TH-2 of P6401 respectively with no input signal.
Confirm that the fan rotates high speed after few seconds.



ADJUSTMENT AND CONFIRMATION PROCEDURES 1

Idling current adjustment

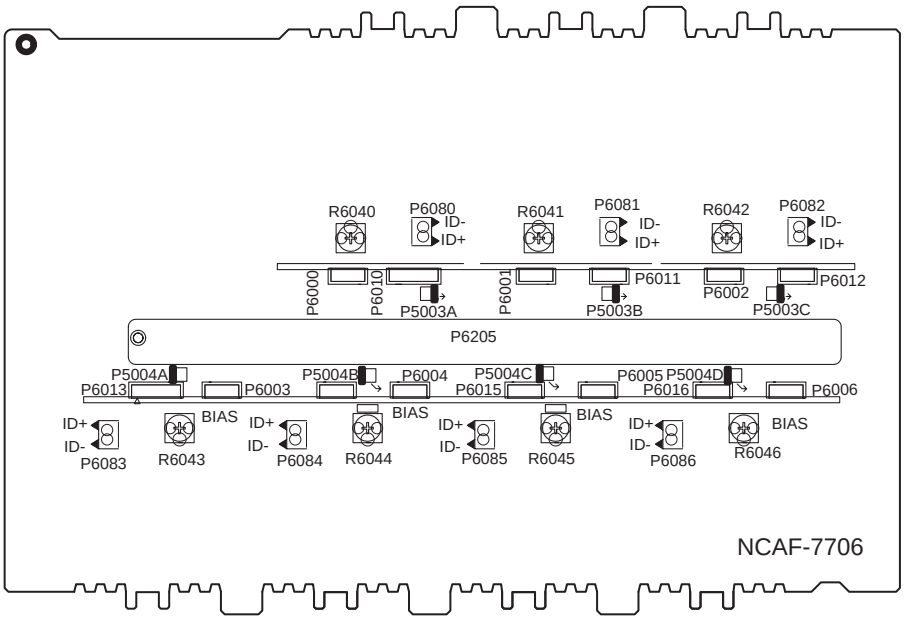
Before Idling current adjustment, turn the trimming resistors R6040 to R6046 to counter-clockwise.
Connect the DC voltmeter at the sockets P6080 to P6086.
After turn POWER to ON, adjust the trimming resistors R6040, R6041 and R6042 so that the reading of voltmeter becomes 11 mV. (Front and center channels)
Adjust the trimming resistors R6043, R6044, R6045 and R6046 so that the reading of voltmeter becomes 4.5 mV. (Surround and surround back channels)
After adjustment, attach the top cover.
Confirm the voltage of points above after about five minutes.

Front and center channels

When less than 16.5 mV, readjust the resistors above so that the voltage becomes 16.5 mV.
When 16.5 mV to 18.5 mV, you are not necessary to adjust.
When more than 18.5 mV, readjust the resistors above so that the voltage becomes 18.5 mV.

Surround and surround back channels

When less than 6.0 mV, readjust the resistors above so that the voltage becomes 6.0 mV.
When 6.0 mV to 8.0 mV, you are not necessary to adjust.
When more than 6.0 mV, readjust the resistors above so that the voltage becomes 8.0 mV.
Note: No load and No signal



Confirmation of protection circuit

1. Confirmation of operation of speaker relay

Confirm that the speaker relays turn ON approximate. 5 seconds after the power switch is turned ON.
Confirm that the speaker relays turn OFF immediately after the power switch is turned OFF.

2. Confirmation of DC detection circuit

Press and hold down CD button, then press STANDBY/ON and DISPLAY buttons to set the unit to "Test-1" mode.
After "Test-1" on the FL tube light on, press VIDEO 1 button to set the unit to "Test-1-00".
Apply DC 1.5 to 3.5V to the MULTI-CH INPUT terminal with no load.
Confirm that the speaker relay turns OFF.
Apply DC -1.5 to -3.5 V to the MULTI-CH INPUT terminal with no load.
Confirm that the speaker relay turns OFF.
Caution: Don't apply DC voltage more than 1 sec..

EXPLODED VIEW-PARTS LIST

Note:
<D>: 120V model only
<A>: Australian model only

REF. NO.	PART NO.	DESCRIPTION
U6	1A956590-1H	NAAF-7690-1H, F/C ch. driver circuit PC board ass'y <D>
	1A956590-1J	NAAF-7690-1J, F/C ch. driver circuit PC board ass'y <A>
U7	1A956591-1H	NAPS-7691-1H, Primary circuit PC board ass'y <D>
	1A956591-1J	NAPS-7691-1J, Primary circuit PC board ass'y <A>
U8	1A956592-1H	NAPS-7692-1H, Bias selector relay PC board ass'y <D>
	1A956592-1J	NAPS-7692-1J, Bias selector relay PC board ass'y <A>
U10	1A956594-1H	NAETC-7694-1H, F/C ch. Speaker terminal PC board ass'y <D>
	1A956594-1J	NAETC-7694-1J, F/C ch. Speaker terminal PC board ass'y <A>
U11	1A956595-1H	NAETC-7695-1H, Surround ch. Speaker terminal PC board ass'y <D>
	1A956595-1J	NAETC-7695-1J, Surround ch. Speaker terminal PC board ass'y <A>
U12	1A956596-1H	NAPS-7696-1H, Fan drive circuit PC board ass'y <D>
	1A956596-1J	NAPS-7696-1J, Fan drive circuit PC board ass'y <A>
U13	1A956597-1H	NAPS-7697-1H, Thermal detector PC board ass'y <D>
	1A956597-1J	NAPS-7697-1J, Thermal detector PC board ass'y <A>
U16	1A956500-1H	NAETC-7700-1H, AC inlet terminal PC board ass'y <D>
	1A956500-1J	NAETC-7700-1J, AC inlet terminal PC board ass'y <A>
U17	1A956501-1H	NAETC-7701-1H, PC board for holder <D>
	1A956501-1J	NAETC-7701-1J, PC board for holder <A>
U18	1A956502-1H	NAETC-7702-1H, PC board for holder <D>
	1A956502-1J	NAETC-7702-1J, PC board for holder <A>
U21	1A956506-1C	NAAF-7706-1C, Power amplifier PC board ass'y <D>
	1A956506-1D	NAAF-7706-1D, Power amplifier PC board ass'y <A>
U22	1A956507-1C	NAAF-7707-1C, Surround ch. driver amplifier PC board ass'y <D>
	1A956507-1D	NAAF-7707-1D, Surround ch. driver amplifier PC board ass'y <A>
U23	1A956508-1C	NAPS-7708-1C, Power supply PC board ass'y <D>
	1A956508-1D	NAPS-7708-1D, Power supply PC board ass'y <A>
U29	1A956514-1C	NAETC-7714-1C, Thermal detector PC board ass'y <D>
	1A956514-1D	NAETC-7714-1D, Thermal detector PC board ass'y <A>
U31	1A956518-1C	NAAF-7718-1C, Pre. amplifier PC board ass'y <A>
	1A956518-1E	NAAF-7718-1E, Pre. amplifier PC board ass'y <D>
U32	1A956519-1C	NAAF-7719-1C, Audio terminal PC board ass'y <A>
	1A956519-1E	NAAF-7719-1E, Audio terminal PC board ass'y <D>
U33	1A956520-1C	NAAF-7720-1C, Video terminal PC board ass'y <A>
	1A956520-1E	NAAF-7720-1E, Video terminal PC board ass'y <D>
U35	1A956528-2A	NAAR-7728-2A, Main connector PC board ass'y <D>
	1A956528-2B	NAAR-7728-2B, Main connector PC board ass'y <A>
U36	1A956553-1A	NAVD-7753-1A, Composite video terminal PC board ass'y <D>
	1A956529-2B	NAVD-7729-2B, Composite video PC board ass'y <A>
U37	1A956554-1A	NAVD-7754-1A, S video terminal PC board ass'y <D>
	1A956530-2B	NAVD-7730-2B, S video terminal PC board ass'y <A>
U38	1A956555-1A	NAVD-7755-1A, Component video terminal PC board ass'y <D>
	1A956531-2B	NAVD-7731-2B, Component video terminal PC board ass'y <A>
U40	1A956525-1E	NAETC-7725-1E, Connector PC board ass'y <D>
U44	1A956538-1F	NADIS-7738-1F, Display circuit PC board ass'y <D>
	1A956538-1G	NADIS-7738-1G, Display circuit PC board ass'y <A>
U45	1A956539-1F	NAETC-7739-1F, Volume PC board ass'y <D>
	1A956539-1G	NAETC-7739-1G, Volume PC board ass'y <A>
U46	1A956540-1F	NAETC-7740-1F, Headphone terminal PC board ass'y <D>
	1A956540-1G	NAETC-7740-1G, Headphone terminal PC board ass'y <A>
U47	1A956541-1F	NAETC-7741-1F, Front video terminal PC board ass'y <D>
	1A956541-1G	NAETC-7741-1G, Front video terminal PC board ass'y <A>
U48	1A956542-1F	NAETC-7742-1F, Front video terminal PC board ass'y <D>
	1A956542-1G	NAETC-7742-1G, Front video terminal PC board ass'y <A>
U51	240138A or 240134A	ENG06501QR or TFCE1U114B, Tuner pack <D>
	240139A or 240135	ENG07501QR or TFCE1E512A, Tuner pack <A>

EXPLODED VIEW-PARTS LIST

Note:
<D>: 120V model only
<A>: Australian model only

REF. NO.	PART NO.	DESCRIPTION
1	27111242C	Front bracket
2	27191153B	Holder, jack
3	838430088	3TTB+8B(BC), Self-tapping screw
4	838130088	3TTB+8B, Self-tapping screw
6	28141447	Cushion
7	28191939	Clear plate
8	28133387	Back plate
9	28198905	Facet
10	82143010	3P+10FN(BC), Pan head screw
12	28198933	Facet 5
13	28198936	Facet 6
14	28159047	Decorative frame
16	28135278	Badge
18	28148526	Door
19	27230047	Push latch
20	27191179	Holder R
21	27191178	Holder L
22	28180160	Hinge L
23	28180161	Hinge R
24	27301947	Damper
25	27301946	Gear
27	831430088	3TTW+8B(BC), Self-tapping screw
28	801433	3SMS8W.SW+14B(BC), Special screw
29	838430088	3TTB+8B(BC), Self-tapping screw
29	838120088	2TTB+8B, Self-tapping screw
30	28325913	Knob, volume
31	28325756	Knob, standby
33	27100408-1A	Chassis
34	27130870A	Bracket, power transformer
35	27190965	Holder
36	27190693A	KGLS-6RF, Holder
37	27190266	KGLS-12RF, Holder
38	27190164	KGLS-14S, Holder
39	830440089	4TTC+8C(BC), Self-tapping screw
40	28141511	t1.0*5*5, Cushion
41	28141484	Cushion
42	27191112	KGPS-6RF, Holder
43	27141797	Retainer, fan
44	27150470	Shield plate, fan
45	838450108	5TTB+10B(BC), Self-tapping screw
46	880016	P3035B, Plastic rivet
47	27150471	Shield plate
49	27150474	Shield plate, wire
52	27160489A	Heat sink
53	801606	3SMH10W.SW+15B(CU), Special screw
54	27141681	Retainer, PC board
55	27141798	Retainer R, heat sink
56	27141799	Retainer L, heat sink
57	27130869	Bracket, heat sink
58	27130745	Bracket
59	27255004	CS-1U, Clip
61	838430107	3TTB+10S(BC), Self-tapping screw
62	28184817-1	Top cover
63	29363226	Label, display
64	29362772	Label, cover
65	838430088	3TTB+8B(BC), Self-tapping screw
66	838440089	4TTB+8C(BC), Self-tapping screw
67	27175319B	Leg
68	28141494	Cushion
69	831430088	3TTW+8B(BC), Self-tapping screw
70	27123034-1	Rear panel <D>
	27123042-1	Rear panel <A>
71	838430088	3TTB+8B(BC), Self-tapping screw
72	87643010	W3*10F(BC), Flat washer
73	838930088	3TTB+8B(UN), Self-tapping screw
74	838440089	4TTB+8C(BC), Self-tapping screw
75	838430068	3TTB+6B(BC), Self-tapping screw
81	27212450	Front panel
82	27262683	Plate, door
83	27190470	KGLS-18S, Holder
86	260208	Binder
87	260258	Binder
91	27225149	Shield case
92	27150485	Shield plate
95	29362609	Label, power transformer
97	223025	AC262, Isolated sheet
98	29363264	Label MAC
99	27141827	Retainer A
E821	24502310	D09T-24PG10(EX), Fan
F6901,F6902	252100	⚠ 10A-EAK, Fuse <A>
F6901,F6902	252196	⚠ 12A-UL/T-314, Fuse <D>
F901	252196	⚠ 12A-UL/T-314, Fuse <D>
F902	252078,	⚠ 5A-SE-EAK,
	252244 or	⚠ 5A-SE-TL250V or
	252278	⚠ 5A-SE-TL250V, Fuse <A>
F903	252075,	⚠ 2.5A-SE-EAK,
	252241 or	⚠ 2.5A-SE-TL250V or
	252275	⚠ 2.5A-SE-TL250V, Fuse <A>
F9501,F9502	252160 or	⚠ 2.5A-UL/T-237 or
	252254	⚠ 2.5A-T/UL-ST2, Fuse <D>
	252075,	⚠ 2.5A-SE-EAK,
	252241 or	⚠ 2.5A-SE-TL250V or
	252275	⚠ 2.5A-SE-TL250V, Fuse <A>
F9501A	29363313	T2.5AL1.6AL250V, Label, fuse <A>
F9503,F9504	252158 or	⚠ 1.6A-UL/T-237 or
	252252	⚠ 1.6A-T/UL-ST2, Fuse <D>
	252073,	⚠ 1.6A-SE-EAK,
	252239 or	⚠ 1.6A-SE-TL250V or
	252273	⚠ 1.6A-SE-TL250V, Fuse <A>
P1010	2047151012	NCFC7-151012, Flexible cable
P2901	2047191012	NCFC7-191012, Flexible cable
P6009	27141825	Retainer, bus
P602	2009990753UL	NSAS-8P1059, Socket
P603	204406027	NCFC4-062512, Flexible cable
P603C	79012	Tube FFC
P6205	27141826	Retainer, bus
P7201	2047312512	NCFC7-312512, Flexible cable
P7701	2047051012	NCFC7-051012,Flexible cable
Q6050~Q6056	2203083 or	* 2SC5359-O or
	2203082	* 2SC5359-R, Transistor
Q6060~Q6066	2203073 or	* 2SA1987-O or
	2203072	* 2SA1987-R, Transistor
Q9422A	223026	Isolated sheet
Q9422B	223032	TO-66(1), Isolated washer
T901	2301649	⚠ NPT-1453D, Power transformer <D>
	2301650	⚠ NPT-1453P, Power transformer <A>
U1	1A956587-1C	NADG-7687-1C, DSP circuit PC board ass'y
U2	1A956562-2	NADG-7662-2,Net-tune circuit PC board ass'y

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

CAUTION: Replacement for transistor of mark *, if necessary must be made from the same beta group (H_{FE}) as the original type.

PACKING VIEW VIEW-PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
101	29092063-1	Pad
102	29095906	Protection sheet, door
103	29100035-1	720*1020, Polybag
104	29110149	Tape, cellophane
105	29110148	PP tape
111	29053952-1	Carton box
121	29100097-1A	350*250, Polybag
123	29343415	Instruction manual
127	29343416	Instruction manual, digits
128	29343458	Instruction E, Net-tune
130	29355256	Instruction sheet, caution
135	29365089	Warranty card <D>
136	29363059A	Label, speaker cable
141	292115	FM antenna <A>
	292142	FM antenna <D>
142	232140	NMA-3057, AM loop antenna
143	3010358	UM-3, Battery
144	25065462	YAE21-0237, Antenna adapter <A>
151	24140512	USR-5, Remote controller <A>
	24140513	USR-5RF, Remote controller <D>
P901	253297KAW or ⚠	AS-UC-2 or
	253352TES ⚠	AS-UC-2, Power supply cord <D>
	253311VOL ⚠	AS-SAA, Power supply cord <A>

Note:
<D>: 120V model only
<A>: Australian model only

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD-PART LIST 1

Note: <D>: 120V model only <A>: Australian model only

DSP circuit PC board (NADG-7687-1C)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q100~Q102	22241448R2	NJM4580M-D
Q103	22241522R2	AK4528VF
Q120,Q121	22274040ER2TO	TC74VHC4040FT
Q121	22274000GR2TO	TC74VHCT00AFT
Q130	222740046R2	74HCU04F
Q131	22241633R3	AK4114VQ
Q160	22240928R2	TC9246F
Q161	222780053R2JR	NJM78L05UA
Q170	22278028DR2JR	NJM2391DL1-285
Q171	22278033DR2NE or	MPC2933T or
	22278033DR2JR	NJM2391DL1-33
Q190	22274157ER2TO or	TC74VHC157FT or
	22274157IR2TI	SN74AHC157PWR
Q700	22241846R3	MB86D41PFV
Q7000	22241512	M30624FGAFP
Q701,Q751	22274074ER2TO or	TC74VHC74FT or
	22274074IR2TI	SN74AHC74PWR
Q703	22241847R3	MB86344BPFV
Q705,Q706	22241612R2 or	CY7C1019BV33-15VCT or
	22241887R2	CY7C1019CV33-15VCT
Q7100,Q7101	22274541ER2TO or	TC74VHC541FT or
	22274541IR2TI	SN74AHC541PWR
Q7102	222740077R2TO	TC74HCT7007AF
Q800	22241521R3	AK4356VQ
Q801~Q804	22241449R2,	NJM5532M-D,
	22241409R2 or	BA15532F or
	22241472R2	NJM2114M-D
	Transistors	
Q162,Q7001	2214490R2 or	RN1404 or
	2216210R2	KRC104S
	Photo couplers	
U100~U103	24120101	TORX179L
U104,U105	24120102	TOTX179L
	Diodes	
D102~D109	223234R2 or	1SS352 or
D7000~D7004	223269R2	1SS355
D7005	224660624R2,	HZU6.2B,
	224490620R2or	UDZ6.2B or
	224550620R2	UDZS6.2B
	Oscillators	
X160	3010331R2	HC-49/U03C24.576MHz,Crystal
X700	3010368R2	XTL-13.5M,Crystal
X7000	3010329R2	CSTCV16.00MXJ0C,Ceramic
X751	3010368R2	XTL-13.5M,Crystal
	Coils	
L101,L102	231237M022R2 or	NCH-1471 or
L131,L133	233533M022R2	NCH-1587-022M
L130,L136	231237K470R2	NCH-1479
L130,L136	233533K470R2	NCH-1587-470K
L132,L134	230958R1	BK1608LM182-T
L135,L701	231237M022R2 or	NCH-1471 or
	233533M022R2	NCH-1587-022M
L160,L162	231237K470R2 or	NCH-1479 or
L170,L753	233533K470R2	NCH-1587-470K
L161	230958R1	BK1608LM182-T
L7000	231237K220R2 or	NCH-1477 or
	233533K220R2	NCH-1587-220K
L751	231237M022R2 or	NCH-1471 or
L801,L802	233533M022R2	NCH-1587-022M
R124,R125	230959R1	BK1608LL241-T
R133~R135	230958R1	BK1608LM182-T

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C100~C103	356744709R2	47uF,16V, Elect., chip
C108,C110	356724709R2	47uF,6.3V, Elect., chip
C113,C114	373021524R2	1500pF+/-5%,50V,Plastic
C116,C119	356723319R2	330uF,6.3V, Elect., chip
C141,C148	356724709R2	47uF,6.3V, Elect., chip
C150	356741009R2	10uF,16V, Elect., chip
C152	356724709R2	47uF,6.3V, Elect., chip
C157	3567A1019R2	100uF,4V, Elect., chip
C159	356784799R2	0.47uF,50V, Elect., chip
C167,C170	356724709R2	47uF,6.3V, Elect., chip
C172	356724709R2	47uF,6.3V, Elect., chip
C176	356744709R2	47uF,16V, Elect., chip
C177,C178	3567A1019R2	100uF,4V, Elect., chip
C7000	3000078 or	DX-5R5L104 or
	3000121	SCDA5R5104V, Super
C7002,C7003	356721019R2	100uF,6.3V, Elect., chip
C7004	356780109R2	1uF,50V, Elect., chip
C7005	356721019R2	100uF,6.3V, Elect., chip
C719,C720	3567A1019R2	100uF,4V, Elect., chip
C764~C766	3567A1019R2	100uF,4V, Elect., chip
C802,C807	356723319R2	330uF,6.3V, Elect., chip
C819,C820	373024724R2	4700pF+/-5%,50V,Plastic
C823,C824	373024724R2	4700pF+/-5%,50V,Plastic
C826	373043334R2	0.033uF+/-5%,16V,Plastic
C827~C830	373026814R2	680pF+/-5%,50V,Plastic
C831~C834	373023314R2	330pF+/-5%,50V,Plastic
C835~C838	373026814R2	680pF+/-5%,50V,Plastic
C839,C840	373023314R2	330pF+/-5%,50V,Plastic
C847,C848	356744709R2	47uF,16V, Elect., chip
C849,C850	356741019R2	100uF,16V, Elect., chip
C851~C854	356744709R2	47uF,16V, Elect., chip
	Resistors	
R782	43474056004R1	RM0KJ560X04,Array
R787~R791	43474056004R1	RM0KJ560X04,Array
	Terminal	
P101	25045624	NPJ-3PDO431
	Sockets	
P603B	25052572R2	NSCT-6P2469
P7002,P7004	25051527	NSCT-16P1314
P7003,P800	25051241	NSCT-20P1031
P7701A	25052277R2	NSCT-5P2174
	Plugs	
P100	25055133	NPLG-3P117
P7000	25056056	NPLG-8P1006
	Cushion	
Q800A	28141445	(DAC)

F/C ch.driver circuit PC board (NAAF-7690-1H/1J)

CIRCUIT NO.	PART NO.		DESCRIPTION
	Transistors		
Q5000~Q5002	2215896,	*	KTC3200-BL,
Q5010~Q5012	2210755,	*	2SC1775A-E,
	2210756 or	*	2SC1775A-F or
	2211733	*	2SC1845-E
Q5020~Q5022	2215896,		KTC3200-BL,
	2210755,		2SC1775A-E,
	2210756 or		2SC1775A-F or
	2211733		2SC1845-E
Q5030~Q5032	2215844,		KTA1024-Y,
Q5040~Q5042	2211353,		2SA949-O,
	2211354 or		2SA949-Y or
	2215843		KTA1024-O

CAUTION: Replacement for transistor of mark *, if necessary must be made from the same beta group (H_{FE}) as the original type.

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD-PART LIST 2

Note: <D>: 120V model only <A>: Australian model only

CIRCUIT NO.	PART NO.		DESCRIPTION
	Capacitors		
C100~C103	356744709R2		47uF,16V, Elect., chip
C108,C110	356724709R2		47uF,6.3V, Elect., chip
C113,C114	373021524R2		1500pF+/-5%,50V,Plastic
C116,C119	356723319R2		330uF,6.3V, Elect., chip
C141,C148	356724709R2		47uF,6.3V, Elect., chip
C150	356741009R2		10uF,16V, Elect., chip
C152	356724709R2		47uF,6.3V, Elect., chip
C157	3567A1019R2		100uF,4V, Elect., chip
C159	356784799R2		0.47uF,50V, Elect., chip
C167,C170	356724709R2		47uF,6.3V, Elect., chip
C172	356724709R2		47uF,6.3V, Elect., chip
C176	356744709R2		47uF,16V, Elect., chip
C177,C178	3567A1019R2		100uF,4V, Elect., chip
C7000	3000078 or		DX-5R5L104 or
	3000121		SCDA5R5104V, Super
C7002,C7003	356721019R2		100uF,6.3V, Elect., chip
C7004	356780109R2		1uF,50V, Elect., chip
C7005	356721019R2		100uF,6.3V, Elect., chip
C719,C720	3567A1019R2		100uF,4V, Elect., chip
C764~C766	3567A1019R2		100uF,4V, Elect., chip
C802,C807	356723319R2		330uF,6.3V, Elect., chip
C819,C820	373024724R2		4700pF+/-5%,50V,Plastic
C823,C824	373024724R2		4700pF+/-5%,50V,Plastic
C826	373043334R2		0.033uF+/-5%,16V,Plastic
C827~C830	373026814R2		680pF+/-5%,50V,Plastic
C831~C834	373023314R2		330pF+/-5%,50V,Plastic
C835~C838	373026814R2		680pF+/-5%,50V,Plastic
C839,C840	373023314R2		330pF+/-5%,50V,Plastic
C847,C848	356744709R2		47uF,16V, Elect., chip
C849,C850	356741019R2		100uF,16V, Elect., chip
C851~C854	356744709R2		47uF,16V, Elect., chip
	Resistors		
R782	43474056004R1		RM0KJ560X04,Array
R787~R791	43474056004R1		RM0KJ560X04,Array
	Terminal		
P101	25045624		NPJ-3PDO431
	Sockets		
P603B	25052572R2		NSCT-6P2469
P7002,P7004	25051527		NSCT-16P1314
P7003,P800	25051241		NSCT-20P1031
P7701A	25052277R2		NSCT-5P2174
	Plugs		
P100	25055133		NPLG-3P117
P7000	25056056		NPLG-8P1006
	Cushion		
Q800A	28141445		(DAC)

F/C ch.driver circuit PC board (NAAF-7690-1H/1J)

CIRCUIT NO.	PART NO.		DESCRIPTION
	Transistors		
Q5000~Q5002	2215896,	*	KTC3200-BL,
Q5010~Q5012	2210755,	*	2SC1775A-E,
	2210756 or	*	2SC1775A-F or
	2211733	*	2SC1845-E
Q5020~Q5022	2215896,		KTC3200-BL,
	2210755,		2SC1775A-E,
	2210756 or		2SC1775A-F or
	2211733		2SC1845-E
Q5030~Q5032	2215844,		KTA1024-Y,
Q5040~Q5042	2211353,		2SA949-O,
	2211354 or		2SA949-Y or
	2215843		KTA1024-O

CAUTION: Replacement for transistor of mark *, if necessary must be made from the same beta group (H_{FE}) as the original type.

CIRCUIT NO.	PART NO.		DESCRIPTION
	Capacitors		
C901	3500196S	!	RE275V-103M,IS
C922	394662217		220uF,35V, Elect.
	Resistors		
R901	4000206S or	!	RD1/2SPH-3.3M or
	431533355	!	RC1/2GFKUL-3.3M <D>
R924	443528204		82ohm+/-5%, 1/2W, Metal oxide
	Relay		
RL901	25065584 or	!	NRL-1P10A-DC12-140 or
	25065516	!	NRL-1P10A-DC12-097
	Fuses		
F901	252196		12A-UL/T-314, Fuse <D>
F902	252078,		5A-SE-EAK,
F902 or	252244 or		5A-SE-TL250V or
F902 or	252278		5A-SE-TL250V, Fuse <A>
F903	252075,		2.5A-SE-EAK,
F903 or	252241 or		2.5A-SE-TL250V or
F903 or	252275		2.5A-SE-TL250V, Fuse <A>
	Fuse holders		
F901A,F901B	250113	!	SN5051 <D>
F902A,F902B	25052133	!	NSCT-1P2031 <A>
F903A,F903B	25052133	!	NSCT-1P2031 <A>
	AC outlet		
P902	25051126	!	NSCT-4P913 <D>
P902	25052115	!	NSCT-2P2013 <A>
	Sockets		
JL931B	25050267		NSCT-3P95
	Plug		
P911	25055675 or		NPLG-2P631 or
	25056028		NPLG-2P0978
	Fuse labels		
F901C	29362325		12A/250V <D>
F902C	29361938		T5AL250V <A>

Bias selector relay PC board (NAPS-7692-1H/1J)

CIRCUIT NO.	PART NO.		DESCRIPTION
	Diodes		
D6901,D6902	22380260,		RL1N4003,
	22380032 or		1SR139-100 or
	22380035		GP104003E
D6903,D6904	22380309 or		D15XB60 or
	22380044		RBV-1506
D6906	223163,		1SS133,
	223205 or		1SS270A or
	223222		WG713A
	Capacitors		
C6903	374722234		0.022uF+/-5%,50V,Plastic
C6908,C6909	374733344		0.33uF+/-5%,100V,Plastic
C6910,C6911	374723344		0.33uF+/-5%,50V,Plastic
C6915,C6916	374733344		0.33uF+/-5%,100V,Plastic
	Relays		
RL6901,RL6902	25065584 or		NRL-1P10A-DC12-140 or
	25065516		NRL-1P10A-DC12-097
	Fuses		
F6901,F6902	252100		10A-EAK, Fuse <A>
	252196		12A-UL/T-314, Fuse <D>
	Fuse holders		
F6901A,F6901B	250113	!	SN5051 <D>
F6901A,F6901B	25052133	!	NSCT-1P2031 <A>
F6902A,F6902B	250113	!	SN5051 <D>
F6902A,F6902B	25052133	!	NSCT-1P2031 <A>
	Socket		
JL6953B	25050268		NSCT-4P96

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD-PART LIST 3

Note: <D>: 120V model only <A>: Australian model only

CIRCUIT NO.	PART NO.	DESCRIPTION
	Plugs	
P6951	25055172	NPLG-9P156
P6952A	25055168	NPLG-5P152
P9505A	25055600	NPLG-2P568
	Fuse label	
F6902C	29362325	12A/250V <D>
F6902C	29362801	T10AL250V <A>
	Radiator	
D6903A	27160499	RAD-164
	Screws	
D6903B,D6904B	82143010	3P+10FN(BC), Pan head
	Washers	
D6903C,D6904C	871430	SW-3(BC), Spring
	Tape	
D6903D	29110083	Cloth

F/C ch.speaker terminal PC board (NAETC-7694-1H/1J)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diodes	
D6600	223163, 223205 or 223222	1SS133, 1SS270A or WG713A
	Coils	
L6800~L6802	231176S	S-1.3C <A>
	Capacitors	
C6830~C6832	374731034	0.01uF+/-5%,100V,Plastic
C6840~C6842	374731024	1000pF+/-5%,100V,Plastic <A>
	Resistors	
R6830~R6832	453630824	8.2ohm+/-5%, 1W, Metal
	Relays	
RL6600,RL6602	25065563, 25065517 or 25065586	NRL-2P5A-DC24-129, NRL-2P5A-DC24-098 or NRL-2P5A-DC24-142
	Terminal	
P6800	25060337	NTM-6PDMN268 <D>
	25060338	NTM-6PDMN269 <A>
	Plugs	
P6007A	25055167	NPLG-4P151
P6810D	25055166	NPLG-3P150
P6830	25055734	NPLG-3P690

Surround ch.speaker terminal PC board (NAETC-7695-1H/1J)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Diodes	
D6603,D6605	223163, 223205 or 223222	1SS133, 1SS270A or WG713A
	Coils	
L6803~L6806	231176S	S-1.3C <A>
	Capacitors	
C6833~C6836	374731034	0.01uF+/-5%,100V,Plastic
C6843~C6846	374731024	1000pF+/-5%,100V,Plastic <A>
	Resistors	
R6833~R6836	453630824	8.2ohm+/-5%, 1W, Metal
	Relays	
RL6603,RL6605	25065563, 25065517 or 25065586	NRL-2P5A-DC24-129, NRL-2P5A-DC24-098 or NRL-2P5A-DC24-142
	Terminal	
P6802	25060339	NTM-8PDMN270 <D>
	25060340	NTM-8PDMN271 <A>
	Plugs	
P6008A	25055169	NPLG-6P153
P6812E	25055168	NPLG-5P152
P6832	25055734	NPLG-3P690

Fan driver circuit PC board (NAETC-7696-1H/1J)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q5601	2212445	2SK365-GR
Q5602,Q5603	2215864,	KTC3199-GR,
Q5607,Q6701	2212115,	2SC2458-GR,
Q6702	2213284 or 2213285	2SC1740S-R or 2SC1740S-S
Q5604,Q5605	2215820,	KRC104M,
Q5608,Q5609	221282 or 2213560	DTC144ES or RN1204
Q5606	2203595, 2202705, 2202706 or 2203594	KTC2026-GR, 2SD2394-E, 2SD2394-F or KTC2026-Y
Q6704	2215995, 2212125, 2213354 or 2213355	KTA1267-GR, 2SA1048-GR, 2SA933S-R or 2SA933S-S
	Diodes	
D5601	223163,	1SS133,
D5604~D5607	223205 or	1SS270A or
D5609,D5610	223222	WG713A
D5602,D5603	22380260, 22380032 or 22380035	RL1N4003, 1SR139-100 or GP104003E
D5611	224471303	MTZJ13C
D6701,D6702	223163, 223205 or 223222	1SS133, 1SS270A or WG713A
D6703,D6704	224470512	MTZJ5.1B
	Capacitors	
C5602~C5604	394661017	100uF,35V, Elect.
C6701,C6706	394621017	100uF,6.3V, Elect.
C6704	394680107	1uF,50V, Elect.
	Resistors	
R5612	415471014	100ohm+/-5%,1/4W,NF carbon
R5613	453530474	4.7ohm+/-5%, 1/2W, Metal
R5616	441721224F	1.2kohm+/-5%, 2W, Metal oxide
	Sockets	
P6931A	25051230	NSCT-5P1020
P7701B	25052201, 25051271, 25051812 or 25052014	NSCT-5P2098, NSCT-5P1060, NSCT-5P1599 or NSCT-5P1801
JL6933A	25051088	NSCT-4P875
JL9503A	25051110	NSCT-6P897

Thermal detector PC board (NAETC-7697-1H/1J)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Thermistors	
R5651	4000153	PTH9M04BF222TS2F333
R5653	4000150	PTH9M04BC222TS2F333 <D>
	4000151	PTH9M04BD222TS2F333 <A>
	Socket	
JL6933B	25051088	NSCT-4P875

AC inlet PC board (NAETC-7700-1H/1J)

CIRCUIT NO.	PART NO.		DESCRIPTION
	AC inlet		
P901B	25055960	!	NPLG-2P913

CAUTION: Replacement for transistor of mark *, if necessary must be made from the same beta group (H_{FE}) as the original type.

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD-PART LIST 4

Note: <D>: 120V model only <A>: Australian model only

Power amplifier PC board (NAAF-7706-1C/1D)

CIRCUIT NO.	PART NO.		DESCRIPTION
	Transistors		
Q6000~Q6006	2213284 or		2SC1740S-R or
Q6010~Q6016	2213285		2SC1740S-S
Q6020~Q6022	2215995,		KTA1267-GR,
	2212125,		2SA1048-GR,
	2213354 or		2SA933S-R or
	2213355		2SA933S-S
Q6023~Q6026	2211455 or		2SA1015-GR or
	2211454		2SA1015-Y
Q6030~Q6032	2211634 or		2SC2229-Y or
	2211633		2SC2229-O
Q6033~Q6036	2203434 or		KTD2061-Y or
	2203010		2SC5171
Q6040~Q6042	2211354 or		2SA949-Y or
	2211353		2SA949-O
Q6043~Q6046	2203424 or		KTB1369-Y or
	2203000		2SA1930
Q6050~Q6056	2203083 or	*	2SC5359-O or
	2203082	*	2SC5359-R
Q6060~Q6066	2203073 or	*	2SA1987-O or
	2203072	*	2SA1987-R
Q6070~Q6076	2214984 or		2SC2631-R or
	2214985		2SC2631-S
Q6090~Q6092	2203424 or		KTB1369-Y or
	2203000		2SA1930
Q6100~Q6102	2203434 or		KTD2061-Y or
	2203010		2SC5171
Q6703	2215885,		KTA1268-GR,
	2211792,		2SA992-F,
	2211793 or		2SA992-E or
	2215886		KTA1268-BL
	Diodes		
D6000~D6006	223163,		1SS133,
	223205 or		1SS270A or
	223222		WG713A
	Cores		
L6000-L6002	5597-45502		
L6010~L6012	5597-45502		
	Capacitors		
C6000~C6006	374721024		1000pF+/-5%,50V,Plastic
C6020~C6022	394500477		4.7uF,160V, Elect.
C6023~C6026	394684707		47uF,50V, Elect.
C6030~C6036	374734734		0.047uF+/-5%,100V,Plastic
C6510~C6514	394690477		4.7uF,100V, Elect.
C6520~C6523	394690477		4.7uF,100V, Elect.
C6531,C6532	374721034		0.01uF+/-5%,50V,Plastic
C6901,C6902	3504374		15000uF,71V, Elect.
	Resistors		
R6040~R6046	5210258		N06HR1KBC,Trimming
R6070~R6072	415476804		68ohm+/-5%,1/4W,NF carbon
R6073~R6076	415471814		180ohm+/-5%,1/4W,NF carbon
R6080~R6082	443521004		10ohm+/-5%, 1/2W, Metal oxide
R6083~R6086	415470224		2.2ohm+/-5%,1/4W,NF carbon
R6090~R6092	443521004		10ohm+/-5%, 1/2W, Metal oxide
R6093~R6096	415470224		2.2ohm+/-5%,1/4W,NF carbon
R6100~R6106	4000201,		RF-5EGKR22,
	4000132 or		RGC55 0.22 or
	4500245		BPR55FK0.22, Metal plate
R6130~R6136	453630824		8.2ohm+/-5%, 1W, Metal
R6230~R6232	415471214		120ohm+/-5%,1/4W,NF carbon
R6240~R6242	415471214		120ohm+/-5%,1/4W,NF carbon
R6250~R6252	415471804		18ohm+/-5%,1/4W,NF carbon
R6260~R6262	415471804		18ohm+/-5%,1/4W,NF carbon
R6270~R6272	415470224		2.2ohm+/-5%,1/4W,NF carbon
R6280~R6282	415470224		2.2ohm+/-5%,1/4W,NF carbon
R6510~R6514	453532294		0.22ohm+/-5%, 1/2W, Metal
R6520~R6523	453532294		0.22ohm+/-5%, 1/2W, Metal
	Terminals		
P5100A,P5101A	25060301		NTM-1P232(M1700)
P5201A,P5202A	25060301		NTM-1P232(M1700)
	Sockets		
P5003	2009990666UL		NSAS-12P0929
P5004	2009990745UL		NSAS-16P1040
P6007	2009990759UL		NSAS-6P1070
P6008	2009990760UL		NSAS-8P1071
P6810	2009990668UL		NSAS-6P0931
P6812	2009990669UL		NSAS-6P0932
P6952	2009990671UL		NSAS-6P0934
	Plugs		
P6000~P6006	25056009		NPLG-4P0959
P6010,P6013	25056011		NPLG-6P0961
P6011,P6012	25056009		NPLG-4P0959
P6014~P6016	25056009		NPLG-4P0959
P6080~P6086	25055038		NPLG-2P29
P6931	25055701		NPLG-5P657
	Bar		
P6201	27141850		BBL50
	Holder		
P6214	27190608-1		UA-0 V0
	Clamps		
P6211~P6213	260226		CP-2S
P6216	260226		CP-2S
P6301~P6303	260224		CP-1S
P6305~P6307	260224		CP-1S
	Heat sinks		
Q6090A~Q6092A	27160486		RAD-155
	Screws		
Q6090B~Q6092B	838430107		3TTB+10S(BC),Self-tapping
Q6100B~Q6102B	838430107		3TTB+10S(BC),Self-tapping

Surround ch. driver circuit PC board (NAAF-7707-1C/1D)

CIRCUIT NO.	PART NO.		DESCRIPTION
	Transistors		
Q5003~Q5006	2215896,	*	KTC3200-BL,
Q5013~Q5016	2210755,	*	2SC1775A-E,
	2210756 or	*	2SC1775A-F or
	2211733	*	2SC1845-E
Q5023~Q5026	2215896,		KTC3200-BL,
	2210755,		2SC1775A-E,
	2210756 or		2SC1775A-F or
	2211733		2SC1845-E
Q5033~Q5036	2215844,		KTA1024-Y,
Q5043~Q5046	2211353,		2SA949-O,
Q5053~Q5056	2211354 or		2SA949-Y or
	2215843		KTA1024-O
Q5083~Q5086	2215854,		KTC3206-Y,
	2211633,		2SC2229-O,
	2211634 or		2SC2229-Y or
	2215853		KTC3206-O
	Diodes		
D5003~D5006	224470562		MTZJ5.6B
	Capacitors		
C5003~C5006	393381007		10uF,50V, Elect.
C5013~C5016	374722215		220pF+/-10%,50V,Plastic
C5043~C5046	393341017		100uF,16V, Elect.
C5053~C5056	394681007		10uF,50V, Elect.

CAUTION: Replacement for transistor of mark *, if necessary must be made from the same beta group (H_{FE}) as the original type.

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD-PART LIST 5

Note: <D>: 120V model only <A>: Australian model only

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C5073~C5076	394691007	10uF,100V, Elect.
C5083~C5086	394672207	22uF,63V, Elect.
C5093~C5096	394684707	47uF,50V, Elect.
C5103~C5106	374721015	100pF+/-10%,50V,Plastic
C5123~C5126	394694707	47uF,100V, Elect.
C5133~C5136	394694707	47uF,100V, Elect.
	Resistors	
R5133~R5136	415478214	820ohm+/-5%,1/4W,NF carbon
R5143~R5146	415478214	820ohm+/-5%,1/4W,NF carbon
R5153~R5156	443521034	10kohm+/-5%, 1/2W, Metal oxide
R5163~R5166	415471024	1kohm+/-5%,1/4W,NF carbon
R5173~R5176	415478214	820ohm+/-5%,1/4W,NF carbon
R5183~R5186	415473304	33ohm+/-5%,1/4W,NF carbon
R5233~R5236	415471504	15ohm+/-5%,1/4W,NF carbon
R5243~R5246	415471504	15ohm+/-5%,1/4W,NF carbon
R5283~R5286	443521034	10kohm+/-5%, 1/2W, Metal oxide
R5303~R5306	415471014	100ohm+/-5%,1/4W,NF carbon
R5333~R5336	415471014	100ohm+/-5%,1/4W,NF carbon
	Terminals	
P5201,P5202	25060302	NTM-1P233(M1969)
	Sockets	
P6003A~P6006A	25052287	NSCT-4P2184
P6013A	25052289	NSCT-6P2186
P6014A~P6016A	25052287	NSCT-4P2184

Power supply PC board (NAPS-7708-1A/1B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q9401	222780185JRC	NJM78M18FA
Q9411	222790185JRC	NJM79M18FA
Q9421	222780053JRC	NJM78L05A
Q9431	222780054JRC	NJM7805FA
Q9441	222790054JRC	NJM7905FA
	Transistors	
Q6901	2215864, 2212115, 2213284 or 2213285	KTC3199-GR, 2SC2458-GR, 2SC1740S-R or 2SC1740S-S
Q9422	2202314 or 2202315	2SA1726-Y or 2SA1726-P
Q9501	2211644	2SA965-Y
	Diodes	
D9501,D9502A	22380285F, 22380022F or 22380271F	RS403M, RBV402 or D3SBA20
D9506,D9507	22380260, 22380032 or 22380035	RL1N4003, 1SR139-100 or GP104003E
D9508	224472704	MTZJ27D
	Capacitors	
C9401,C9402	394561007	10uF,35V, Elect.
C9411,C9412	394561007	10uF,35V, Elect.
C9421,C9422	394561007	10uF,35V, Elect.
C9431,C9432	394561007	10uF,35V, Elect.
C9441,C9442	394561007	10uF,35V, Elect.
C9501~C9504	374723344	0.33uF+/-5%,50V,Plastic
C9505	394662227	2200uF,35V, Elect.
C9506	394661027	1000uF,35V, Elect.
C9507	394682217	220uF,50V, Elect.
C9508	394646827	6800uF,16V, Elect.
C9509	394651027	1000uF,25V, Elect.
C9510	394672217	220uF,63V, Elect.
C9513	374723344	0.33uF+/-5%,50V,Plastic
C9521~C9523	374722234	0.022uF+/-5%,50V,Plastic

CIRCUIT NO.	PART NO.		DESCRIPTION
	Resistors		
R9403	453530224		2.2ohm+/-5%, 1/2W, Metal
R9413	453530824		8.2ohm+/-5%, 1/2W, Metal
R9421~R9425	441620824		8.2ohm+/-5%, 1W, Metal oxide
R9431,R9433	441621004		10ohm+/-5%, 1W, Metal oxide
R9442,R9444	441622204		22ohm+/-5%, 1W, Metal oxide
R9506	415472204		22ohm+/-5%,1/4W,NF carbon
R9510	415470224		2.2ohm+/-5%,1/4W,NF carbon
R9521	453530334		3.3ohm+/-5%, 1/2W, Metal
	Fuses		
F9501,F9502	252160 or	!	2.5A-UL/T-237 or
	252254	!	2.5A-T/UL-ST2, Fuse <D>
	252075,	!	2.5A-SE-EAK,
	252241 or	!	2.5A-SE-TL250V or
	252275	!	2.5A-SE-TL250V, Fuse <A>
F9503,F9504	252158 or	!	1.6A-UL/T-237 or
	252252	!	1.6A-T/UL-ST2, Fuse <D>
	252073,	!	1.6A-SE-EAK,
	252239 or	!	1.6A-SE-TL250V or
	252273	!	1.6A-SE-TL250V, Fuse <A>
	Fuse holders		
F9501A,F9501B	25052133	!	NSCT-1P2031
F9502A,F9502B	25052133	!	NSCT-1P2031
F9503A,F9503B	25052133	!	NSCT-1P2031
F9504A,F9504B	25052133	!	NSCT-1P2031
	Fuse labels		
F9501C	29361747		T2.5AL250V <A>
F9503C	29361769		T1.6AL250V <A>
	Sockets		
JL6953A	25051108		NSCT-4P895
JL7201B	25050281		NSCT-4P109
JL9503B	25050270		NSCT-6P98
JL9504A	25051088		NSCT-4P875
	Plugs		
P9501	25055138		NPLG-8P122
P9502A	25055156		NPLG-12P140

Thermal detector PC board (NAETC-7714-1C/1D)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Socket	
JL9504B	25051088	NSCT-4P875
	Thermistors	
R5652	4000153	PTH9M04BF222TS2F333
R5654	4000150	PTH9M04BC222TS2F333 <D>
	4000151	PTH9M04BD222TS2F333 <A>

Pre. amplifier PC board (NAAF-7718-1C/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q3860~Q3862	22241383R2 or 22240489R1NE	NJM4565M-D or MPC4570G2-T1(MST)
Q4000,Q4800	22241383R2 or 22240489R1NE	NJM4565M-D or MPC4570G2-T1(MST)
Q4100	22240943R2	TC9163AF
Q4101	22241221R2	TC9164AF
Q4200~Q4203	22241640R2	TC94A07F
Q4210~Q4213	22241383R2 or 22240489R1NE	NJM4565M-D or MPC4570G2-T1(MST)
Q4400,Q4401	22241451R9	NJU7306G
Q4410,Q4411	22241450R2 or 22241567R2	NJM2082M-D or NJM2082M

CAUTION: Replacement for transistor of mark *, if necessary must be made from the same beta group (H_{FE}) as the original type.

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD-PART LIST 6

Note: <D>: 120V model only <A>: Australian model only

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q4420~Q4422	2216756R2	2SA1163-BL
Q4600~Q4607	2215410R2	RN1441
Q4610~Q4617	2215410R2	RN1441
Q4810~Q4815	2215410R2	RN1441
	Diode	
D4540	224490510R2	UDZ5.1B
	Capacitors	
C3600~C3607	374723315	330pF+/-10%,50V,Plastic
C3610~C3617	393381007	10uF,50V, Elect.
C3800~C3802	393384707	47uF,50V, Elect.
C3803~C3806	393381007	10uF,50V, Elect.
C3807	354724719	470uF,6.3V, Elect.
C3820,C3821	393384707	47uF,50V, Elect.
C3840,C3841	393381007	10uF,50V, Elect.
C3862,C3863	374721224	1200pF+/-5%,50V,Plastic
C3864,C3865	374722724	2700pF+/-5%,50V,Plastic
C4010,C4011	393381007	10uF,50V, Elect.
C4120,C4121	354742219 or	220uF,16V, Elect.or
C4120,C4121	394642217	220uF,16V, Elect.
C4200~C4207	393381007	10uF,50V, Elect.
C4217	374721024	1000pF+/-5%,50V,Plastic
C4220~C4227	393380107	1uF,50V, Elect.
C4230~C4237	393384707	47uF,50V, Elect.
C4320~C4325	354742219 or	220uF,16V, Elect.or
	394642217	220uF,16V, Elect.
C4410~C4412	374721015	100pF+/-10%,50V,Plastic
C4417	374721024	1000pF+/-5%,50V,Plastic
C4420~C4422	393384707	47uF,50V, Elect.
C4430~C4432	374721044	0.1uF+/-5%,50V,Plastic
C4440~C4442	374721534	0.015uF+/-5%,50V,Plastic
C4540	354721019 or	100uF,6.3V, Elect.or
	394621017	100uF,6.3V, Elect.
C4600~C4602	393384707	47uF,50V, Elect.
C4607	393384707	47uF,50V, Elect.
C4610~C4617	374721024	1000pF+/-5%,50V,Plastic
C4800,C4801	354741009	10uF,16V, Elect.
C4802,C4803	354780229	2.2uF,50V, Elect.
C4806,C4807	354721019	100uF,6.3V, Elect.
C4808,C4809	374722224	2200pF+/-5%,50V,Plastic
C4920,C4921	354742219 or	220uF,16V, Elect.or
	394642217	220uF,16V, Elect.
	Resistors	
R4120,R4121	443522204	22ohm+/-5%, 1/2W, Metal oxide
R4320~R4325	443522204	22ohm+/-5%, 1/2W, Metal oxide
R4920,R4921	443522204	22ohm+/-5%, 1/2W, Metal oxide
	Terminals	
P3600,P4600	25045708	NPJ-4PDGPRW503
P3601,P4601	25045710	NPJ-4PDELNT505
	Sockets	
P4010B	25051235	NSCT-10P1025
P4011B,P4020B	25051240	NSCT-15P1030
	Plugs	
P4012A	25055734	NPLG-3P690
P5003E	25055152	NPLG-8P136
P5004E	25055153	NPLG-9P137
	Bars	
J4220~J4223	27141851	BBL60
	Holders	
P4610C~P4610E	27190540-1	Clamp
P5004G	27190608-1	Clamp

Audio terminal PC board (NAAF-7719-1C/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q1001	222780125	78M12HF
Q3000,Q3020	22241383R2 or	NJM4565M-D or
Q3021	22240489R1NE	MPC4570G2-T1(MST)
Q3100	22241639R2	TC9273F-017
	Capacitors	
C1002,C1007	354741009 or	10uF,16V, Elect.or
C1002,C1007	394641007	10uF,16V, Elect.
C1003,C1006	354780339 or	3.3uF,50V, Elect.or
C1003,C1006	394680337	3.3uF,50V, Elect.
C3000,C3001	374722215	220pF+/-10%,50V,Plastic
C3002,C3003	393384707	47uF,50V, Elect.
C3004,C3005	374721524	1500pF+/-5%,50V,Plastic
C3006,C3007	354722219	220uF,6.3V, Elect.
C3008,C3009	374721234	0.012uF+/-5%,50V,Plastic
C3010,C3011	374723924	3900pF+/-5%,50V,Plastic
C3020~C3023	374723315	330pF+/-10%,50V,Plastic
C3026~C3029	393384707	47uF,50V, Elect.
C3120,C3121	354742219 or	220uF,16V, Elect.or
	394642217	220uF,16V, Elect.
C3122,C3123	354744709 or	47uF,16V, Elect.or
	394644707	47uF,16V, Elect.
	Resistors	
R3120,R3121	443522204	22ohm+/-5%, 1/2W, Metal oxide
	Terminals	
P3000,P3001	25045582 or	NPJ-4PDRW393 or
	25045491	NPJ-4PDBL308
	Sockets	
P1010A	25052248,	NSCT-15P2145,
	25051859 or	NSCT-15P1646 or
	25052061	NSCT-15P1848
P3010B	25051232	NSCT-7P1022
P3011B	25051240	NSCT-15P1030

Vidoe terminal PC board (NAAF-7720-1C/1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q3200~Q3205	22241383R2 or	NJM4565M-D or
Q3400	22240489R1NE	MPC4570G2-T1(MST)
Q3300	22240829	TC9274N-008
	Transistors	
Q3410~Q3413	2215410R2	RN1441
	Capacitors	
C3200~C3203	374723315	330pF+/-10%,50V,Plastic
C3205~C3209	374723315	330pF+/-10%,50V,Plastic
C3212~C3223	393384707	47uF,50V, Elect.
C3250,C3251	393381007	10uF,50V, Elect.
C3252	354741009 or	10uF,16V, Elect.or
	394641007	10uF,16V, Elect.
C3320,C3321	354742219 or	220uF,16V, Elect.or
C3320,C3321	394642217	220uF,16V, Elect.
C3400~C3403	393384707	47uF,50V, Elect.
C3404,C3405	374721024	1000pF+/-5%,50V,Plastic
	Resistors	
R3320,R3321	443522204	22ohm+/-5%, 1/2W, Metal oxide
	Terminals	
P3200~P3203	25045582 or	NPJ-4PDRW393 or
	25045491	NPJ-4PDBL308
	Sockets	
P3210B,P3211B	25051232	NSCT-7P1022
	Plugs	
P3220A	25055133	NPLG-3P117
P602A	25055148	NPLG-4P132

CAUTION: Replacement for transistor of mark *, if necessary must be made from the same beta group (H_{FE}) as the original type.

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD-PART LIST 7

Note: <D>: 120V model only <A>: Australian model only

Connector PC board (NAETC-7725-1E)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Plugs	
P2007A	25055711	NPLG-15P667
P2507A	25055807	NPLG-18P763
P2853A	25055804	NPLG-4P760

Main connector PC bord (NAAR-7728-2A/2B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q2910,Q2913	22241383R2	NJM4565M-D
Q2923	222780155JRC	NJM78M15FA
Q2924	222790155JRC	NJM79M15FA
Q2925	222780093JRCT	NJM78L09A <D>
Q2934	222780565JRC	NJM78M56FA
	Transistors	
Q2901,Q2903	2216175R2 or	KTC3875-GR or
Q2905,Q2907	2213145R2	2SC2712-GR
Q2902,Q2904	2216220R2 or	KRA102S or
Q2906,Q2908	2214530R2	RN2402
Q2909,Q2932	2216175R2 or	KTC3875-GR or
	2213145R2	2SC2712-GR
Q2920	2216400R2	2SB1132
Q2931	2212855 or	2SB1068-U or
	2212853	2SB1068-K
Q2933,Q2935	2216190R2 or	KRC102S or
	2214470R2	RN1402
	Diodes	
D2901~D2903	223234R2 or	1SS352 or
D2922,D2923	223269R2	1SS355
D2920	223234R2 or	1SS352 or
D2920 or	223269R2	1SS355 <D>
D2922	223234R2 or	1SS352 or
	223269R2	1SS355
D2931,D2932	22380260 or	RL1N4003 or
	22380035	GP104003E
D2933	224490560R2	UDZ5.6B
	Capacitors	
C2902~C2905	354741009	10uF,16V, Elect.
C2908	374722724	2700pF+/-5%,50V,Plastic
C2916	374721224	1200pF+/-5%,50V,Plastic
C2917,C2918	354741009	10uF,16V, Elect.
C2923~C2926	354761009	10uF,35V, Elect.
C2927,C2928	354761009	10uF,35V, Elect. <D>
C2931	394641027	1000uF,16V, Elect.
C2932	354741009	10uF,16V, Elect.
	Resistors	
R2933	443522204	22ohm+/-5%, 1/2W, Metal oxide
R2912	453530474	4.7ohm+/-5%, 1/2W, Metal
R2913	453530224	2.2ohm+/-5%, 1/2W, Metal
R2931	453530104	1ohm+/-5%, 1/2W, Metal
	Relay	
RL2901	25065563	NRL-2P5A-DC24-129
	Sockets	
P2901A	25051826	NSCT-19P1613
P4012A	25051255	NSCT-3P1045
P7201B	25051838	NSCT-31P1625
P9502B	2009990748UL	NSAS-24P1045
	Plugs	
P2005A	25055709	NPLG-13P665
P2006A	25055806	NPLG-17P762
P2505A	25055808	NPLG-19P764 <D>
P2505A	25055710	NPLG-14P666 <A>
P2705A	25055804	NPLG-4P760
P2855A	25055704	NPLG-8P660 <D>

CIRCUIT NO.	PART NO.	DESCRIPTION
	Plugs	
P3010A	25055703	NPLG-7P659
P3011A	25055711	NPLG-15P667
P3210A,P3211A	25055703	NPLG-7P659
P4010A	25055706	NPLG-10P662
P4011A	25055711	NPLG-15P667
P4020A	25055711	NPLG-15P667 <D>
P604A	25055709	NPLG-13P665
P7002A,P7004A	25055805	NPLG-16P761
P7003A	25055712	NPLG-20P668
P800A	25055712	NPLG-20P668 <D>
	Heat sink	
Q2934A	27160472	RAD-141
	Screw	
Q2934B	82143010	3P+10FN(BC),Pan head
	Clamp	
P2902	260224	CP-1S

Composite video PC board (NAVD-7729-2B)
(Australian model only)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q2001	22241848R2	LC74761M-9845
Q2010	22241619R2	TC9273F-004
Q2101,Q2201	222740515R2	74HC4051AF
Q2102,Q2105	22241443R2	TK15420M
	Transistors	
Q2002~Q2005	2216220R2 or	KRA102S or
	2214530R2	RN2402
Q2006,Q2008	2216175R2 or	KTC3875-GR or
Q2103,Q2106	2213145R2	2SC2712-GR
Q2007,Q2012	2216210R2 or	KRC104S or
	2214490R2	RN1404
Q2009	2216185R2 or	KTA1504-GR or
Q2104,Q2107	2214375R2	2SA1162-GR
Q2011	2214550R2	RN2404
Q2301~Q2315	2216031R2 or	RN1444-A or
	2216032R2	RN1444-B
	Diodes	
D2001~D2003	223234R2 or	1SS352 or
D2006,D2007	223269R2	1SS355
D2103,D2104	223234R2 or	1SS352 or
D2106,D2107	223269R2	1SS355
	Oscillators	
X2001	3010363T	HC-49/U0314.318M
X2002	3010364T	HC-49/U0317.734M
	Capacitors	
C2009,C2016	354780109	1uF,50V, Elect.
C2010	354721019	100uF,6.3V, Elect.
C2011	375524744	0.47uF+/-5%,50V,Plastic
C2012	354784799	0.47uF,50V, Elect.
C2015	374722234	0.022uF+/-5%,50V,Plastic
C2017	374726824	6800pF+/-5%,50V,Plastic
C2018	354783399	0.33uF,50V, Elect.
C2021,C2022	354721019	100uF,6.3V, Elect.
C2024,C2026	354741009	10uF,16V, Elect.
C2028	354741009	10uF,16V, Elect.
C2047	354721019	100uF,6.3V, Elect.
C2104,C2106	354721019	100uF,6.3V, Elect.
C2204,C2206	354721019	100uF,6.3V, Elect.
C2221	354721019	100uF,6.3V, Elect.
C2301~C2304	354721019	100uF,6.3V, Elect.
C2306	354721019	100uF,6.3V, Elect.
C2338	354724719	470uF,6.3V, Elect.

CAUTION: Replacement for transistor of mark *, if necessary must be made from the same beta group (H_{FE}) as the original type.

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD-PART LIST 8

Note: <D>: 120V model only <A>: Australian model only

CIRCUIT NO.	PART NO.	DESCRIPTION
	Terminals	
P2001~P2003	25045363	NPJ-3PDYE208
	Sockets	
P2005B	25051238	NSCT-13P1028
P2006B,P2007B	25051528	NSCT-17P1315

S video PC board (NAVD-7730-2B)
(Australian model only)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q2451	22241849R2	MM1512
Q2501,Q2511	222740515R2	74HC4051AF
Q2502,Q2602	22241443R2	TK15420M
Q2601,Q2611	222740515R2	74HC4051AF
	Transistors	
Q2401~Q2414	2216031R2 or	RN1444-A or
	2216032R2	RN1444-B
Q2503,Q2505	2216175R2 or	KTC3875-GR or
	2213145R2	2SC2712-GR
Q2504,Q2506	2216185R2 or	KTA1504-GR or
	2214375R2	2SA1162-GR
	Diodes	
D2503~D2506	223234R2 or	1SS352 or
	223269R2	1SS355
	Coils	
L2001	231292J056R2	NCH-1572
L2002	231237K022R2 or	NCH-1471 or
	233533K022R2	NCH-1587-022K
L2471,L2473	231237K022R2	NCH-1471
L2472,L2474	231292J056R2	NCH-1572
	Capacitors	
C2422,C2424	354721019	100uF,6.3V, Elect.
C2426,C2428	354721019	100uF,6.3V, Elect.
C2432,C2452	354721019	100uF,6.3V, Elect.
C2504,C2506	354721019	100uF,6.3V, Elect.
C2573,C2575	354721019	100uF,6.3V, Elect.
C2604,C2606	354721019	100uF,6.3V, Elect.
C2608,C2618	354780229	2.2uF,50V, Elect.
	Sockets	
P2501	25051955	NSCT-4P1742
P2502	25051957	NSCT-12P1744
P2503,P2504	25051956	NSCT-8P1743
P2505B	25051239	NSCT-14P1029
P2507B	25051528	NSCT-17P1315
	Plug	
P2506A	25055236	NPLG-5P220

Component video PC board (NAVD-7731-2K)
(Australian model only)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistor	
Q2701	2216175R2 or	KTC3875-GR or
	2213145R2	2SC2712-GR
	Diodes	
D2701,D2702	223234R2 or	1SS352 or
	223269R2	1SS355
	Relays	
RL2701,RL2702	25065610	NRL-2P1A-DC4.5-156
	Terminals	
P2701~P2703	25045607	NPJ-3PDGLR414
	Socket	
P2705B	25051526	NSCT-4P1313

RS232 terminal PC board (NAETC-7733-2A/2B)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q201	22241537R2	MPD4721GS
Q233	222780565	78M56
	Transistors	
Q221,Q223	2216190R2 or	KRC102S or
	2214470R2	RN1402
Q222,Q224	2212855 or	2SB1068-U or
Q2912	2212853	2SB1068-K
Q231,Q232	2213145R2 or	2SC2712-GR or
	2216175R2	KTC3875-GR
Q2911,Q2921	2216190R2 or	KRC102S or
Q2922	2214470R2	RN1402
	Photo coupler	
Q211	24120080	PC817X
	Diodes	
D201~D203	223234R2 or	1SS352 or
	223269R2	1SS355
	Coil	
L201	230948R2	BLM21A102F
	Capacitors	
C201~C204	354780109	1uF,50V, Elect.
C207	354721019	100uF,6.3V, Elect.
C221~C223	354744709	47uF,16V, Elect.
C231	354741009	10uF,16V, Elect.
C232	354751029S	1000uF,25V, Elect.
C2921	354721019	100uF,6.3V, Elect.
C2922	374722234	0.022uF+/-5%,50V,Plastic
	Resistors	
R234	441721514F	150ohm+/-5%, 2W, Metal oxide
R233	453532294	0.22ohm+/-5%, 1/2W, Metal
	Thermistors	
R227,R228	4000195	RXE030
R2909	4000195	RXE030
	Terminals	
P202,P204	25045647	HSJ1002-01-1020
P203	25045711	HSJ-1003-01-010
	Sockets	
JL931A	25051107	NSCT-3P894
P201	25052379	NSCT-9P2277
P2901B	25051826	NSCT-19P1613
P6830B,P6832B	25051255	NSCT-3P1045
	Heat sink	
Q233A	27160145	RAD-51
	Screw	
Q233B	82143010	3P+10FN(BC)

Connector PC board (NAETC-7734-2B)
(Australian model only)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Plugs	
P2007A,P2507A	25055806	NPLG-17P762

Display circuit PC board (NADIS-7738-1F/1G)

CIRCUIT NO.	PART NO.	DESCRIPTION
	FL tube	
Q7501	212234	HNA-16MM40T
	Remote sensor	
U7201	241335 or	SPS-444-1 or
	241341	SPS-444-1-E1
	ICs	
Q7201	22241512	M30624FGAFP
Q7502	22241680AR2	M66005-0001AFP

CAUTION: Replacement for transistor of mark *, if necessary must be made from the same beta group (H_{FE}) as the original type.

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

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Note: <D>: 120V model only <A>: Australian model only

CIRCUIT NO.	PART NO.	DESCRIPTION
	Transistors	
Q7202	2216230R2 or	KRA103-S or
	2214540R2	RN2403
Q7503,Q7504	2216175R2 or	KTC3875-GR or
	2213145R2	2SC2712-GR
Q7521~Q7527	2216190R2 or	KRC102S or
Q7529~Q7535	2214470R2	RN1402
Q7536,Q7537	2216175R2 or	KTC3875-GR or
	2213145R2	2SC2712-GR
	Diodes	
D7201,D7202	223234R2 or	1SS352 or
D7502	223269R2	1SS355
D7203	224490510R2 or	UDZ5.1B or
	224550510R2	UDZS5.1B
D7501	224491100R2 or	UDZ11B or
	224551100R2	UDZS11B
D7521~D7527	225375	SML1216C
D7529~D7532	225375	SML1216C
D7533	225290	SEL4110R
D7534	225292D	SEL4310G-D
D7535	225374	SEL2E10C
	Oscillator	
X7201	3010322	CST16.00MXW0C1,Ceramic
	Coils	
L7201	231237M022R2 or	NCH-1471 or
	233533M022R2	NCH-1587-022M
R7201,R7202	230958R1	BK1608LM182-T
	Capacitors	
C7201,C7202	355721019	100uF,6.3V, Elect.
C7203,C7506	375524744	0.47uF+/-5%,50V,Plastic
C7207,C7503	355721019	100uF,6.3V, Elect.
C7510	355783309	33uF,50V, Elect.
	Switches	
S7541~S7549	25035699 or	NPS-111-S662 or
S7551~S7559	25035714	NPS-111-S677
S7561~S7568	25035699 or	NPS-111-S662 or
S7571~S7579	25035714	NPS-111-S677
	Sockets	
JL7201A	25051108	NSCT-4P895
P7201A	25051875	NSCT-31P1662
P7482A	25051089	NSCT-5P876
P7559A	25051087	NSCT-3P874
	Plugs	
P7203	25056056	NPLG-8P1006
	Holder	
Q7501A	27191074A	(FL)

Volume PC board (NAETC-7739-1F/1G)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Rotary encoder	
S7569	25065611	EC16B24C25
	Socket	
P7559B	25051087	NSCT-3P874

Headphone terminal PC board (NAETC-7740-1F/1G)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Terminal	
P7481	25045385	YKB26-5153
	Socket	
P7482B	25051089	NSCT-5P876

CAUTION: Replacement for transistor of mark *, if necessary must be made from the same beta group (H_{FE}) as the original type.

Front video terminal PC board (NAETC-7741-1F/1G)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Terminal	
P2510	25045678	NPJ-3PDB475
	Sockets	
P2506B	2009990575UL	NSAS-10P0784
P2508	25051569	NSCT-4P1356
P3220B	2009990420	NSAS-6P0564

Front opto. terminal PC board (NAETC-7742-1F/1G)

CIRCUIT NO.	PART NO.	DESCRIPTION
	Photo coupler	
U2501	24120101	TORX179L
	Capacitors	
C2579	354741009	10uF,16V, Elect.
	Socket	
P102B	2009990513UL	NSAS-6P0675

Composite video terminal PC board (NAVD-7753-1A) (120V model only)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q2001	22241848R2	LC74761M-9845
Q2010	22241619R2	TC9273F-004
Q2101	222740515R2	74HC4051AF
Q2102,Q2105	22241443R2	TK15420M
Q2201	222740515R2	74HC4051AF
	Transistors	
Q2002~Q2005	2216220R2 or	KRA102S or
	2214530R2	RN2402
Q2006,Q2008	2216175R2 or	KTC3875-GR or
Q2103,Q2106	2213145R2	2SC2712-GR
Q2007,Q2012	2216210R2 or	KRC104S or
	2214490R2	RN1404
Q2009,Q2104	2216185R2 or	KTA1504-GR or
Q2107	2214375R2	2SA1162-GR
Q2011	2214550R2	RN2404
Q2301~Q2315	2216031R2 or	RN1444-A or
	2216032R2	RN1444-B
	Diodes	
D2001~D2003	223234R2 or	1SS352 or
D2006,D2007	223269R2	1SS355
D2103,D2104	223234R2 or	1SS352 or
D2106,D2107	223269R2	1SS355
	Coils	
L2001	231292J056R2	NCH-1572
L2002	231237K022R2 or	NCH-1471 or
	233533K022R2	NCH-1587-022K
	Oscillator	
X2001	3010363	HC-49/U0314.318M
	Capacitors	
C2009,C2016	354780109	1uF,50V, Elect.
C2010	354721019	100uF,6.3V, Elect.
C2011	375524744	0.47uF+/-5%,50V,Plastic
C2012	354784799	0.47uF,50V, Elect.
C2015	374722234	0.022uF+/-5%,50V,Plastic
C2017	374726824	6800pF+/-5%,50V,Plastic
C2018	354783399	0.33uF,50V, Elect.
C2021,C2022	354721019	100uF,6.3V, Elect.
C2024,C2026	354741009	10uF,16V, Elect.
C2028	354741009	10uF,16V, Elect.
C2047	354721019	100uF,6.3V, Elect.
C2104,C2106	354721019	100uF,6.3V, Elect.
C2204,C2206	354721019	100uF,6.3V, Elect.
C2221,C2306	354721019	100uF,6.3V, Elect.
C2301~C2304	354721019	100uF,6.3V, Elect.
C2338	354724719	470uF,6.3V, Elect.

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

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Note: <D>: 120V model only <A>: Australian model only

CIRCUIT NO.	PART NO.	DESCRIPTION
	Terminals	
P2001~P2003	25045363	NPJ-3PDYE208
P2005B	25051238	NSCT-13P1028
P2006B	25051528	NSCT-17P1315
P2007B	25051240	NSCT-15P1030

S video terminal PC board (NAVD-7754-1A)
(120V model only)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q2451	22241849R2	MM1512
Q2501,Q2511	222740515R2	74HC4051AF
Q2502,Q2602	22241443R2	TK15420M
Q2601,Q2611	222740515R2	74HC4051AF
Q2701	22241443R2	TK15420M
Q2751	22241850R2	TC90A69F
Q2752	22241858R2	MM1093NF
	Transistors	
Q2401~Q2405	2216031R2 or	RN1444-A or
Q2407~Q2414	2216032R2	RN1444-B
Q2503,Q2505	2216175R2 or	KTC3875-GR or
Q2503,Q2505	2213145R2	2SC2712-GR
Q2504,Q2506	2216185R2 or	KTA1504-GR or
Q2504,Q2506	2214375R2	2SA1162-GR
Q2721,Q2731	2216175R2 or	KTC3875-GR or
Q2742	2213145R2	2SC2712-GR
	Diodes	
D2503~D2506	223234R2 or	1SS352 or
D2503~D2506	223269R2	1SS355
	Oscillator	
X2751	3010369	HC-49/U033.579545M, Crystal
	Coils	
L2721,L2731	231237K220R2	NCH-1477
L2741	231237K220R2	NCH-1477
L2751~L2753	231237K101R2 or	NCH-1481 or
L2751~L2753	233533K101R2	NCH-1587-101K
L2754	231237K330R2	NCH-1478
L2755~L2757	231237K220R2 or	NCH-1477 or
L2755~L2757	233533K220R2	NCH-1587-220K
	Capacitors	
C2422,C2424	354721019	100uF,6.3V, Elect.
C2426,C2428	354721019	100uF,6.3V, Elect.
C2432,C2452	354721019	100uF,6.3V, Elect.
C2504,C2506	354721019	100uF,6.3V, Elect.
C2573,C2575	354721019	100uF,6.3V, Elect.
C2604,C2606	354721019	100uF,6.3V, Elect.
C2608,C2618	354780229	2.2uF,50V, Elect.
C2704,C2706	354721019	100uF,6.3V, Elect.
C2723,C2733	354744709	47uF,16V, Elect.
C2753,C2755	354721019	100uF,6.3V, Elect.
C2759	354784799	0.47uF,50V, Elect.
C2760,C2762	354744709	47uF,16V, Elect.
C2766	374721044	0.1uF+/-5%,50V,Plastic
C2767	374726814	680pF+/-5%,50V,Plastic
C2769,C2780	354721019	100uF,6.3V, Elect.
C2771	354784799	0.47uF,50V, Elect.
C2776	354780479	4.7uF,50V, Elect.
C2779	354780229	2.2uF,50V, Elect.
	Sockets	
P2501	25051955	NSCT-4P1742, S terminal
P2502	25051957	NSCT-12P1744, S terminal
P2503,P2504	25051956	NSCT-8P1743,S terminal
P2505B	25051530	NSCT-19P1317
P2507B	25051529	NSCT-18P1316
P2506A	25055236	NPLG-5P220

Component video terminal PC board (NAVD-7755-1A)
(120V model only)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q2801	22241465R2	LA7106MFP
Q2821	22241851R3	TA1270BF
	Transistors	
Q2803,Q2804	2216330R2 or	KRC101S or
	2214460R2	RN1401
	Diodes	
D2801~D2804	223234R2 or	1SS352 or
	223269R2	1SS355
	Oscillators	
X2821	3010370	CSBLA503KECZF30, Ceramic
X2822	3010369	HC-49/U033.579545M, Crystal
	Capacitors	
C2804,C2806	354721019	100uF,6.3V, Elect.
C2811~C2813	354741009	10uF,16V, Elect.
C2824	354721019	100uF,6.3V, Elect.
C2826,C2829	374721044	0.1uF+/-5%,50V,Plastic
C2828	354744709	47uF,16V, Elect.
C2830,C2833	354780229	2.2uF,50V, Elect.
C2832	374722234	0.022uF+/-5%,50V,Plastic
C2835	374722224	2200pF+/-5%,50V,Plastic
C2836	354782299	0.22uF,50V, Elect.
	Relays	
RL2801~RL2804	25065610	NRL-2P1A-DC4.5-156
	Terminals	
P2801~P2803	25045607	NPJ-3PDGLR414, Video Component
	Sockets	
P2705B,P2853B	25051526	NSCT-4P1313
P2855B	25051233	NSCT-8P1023

Net-tune circuit PC board (NAVD-7662-2)

CIRCUIT NO.	PART NO.	DESCRIPTION
	ICs	
Q601	22241778R2	BA33C25FP, Regulator
Q603,Q608	22241861R3	HM5264165FTT-B6, Main memory
Q604	22241862R3	MX29LV320BTC-90, Flash ROM
Q605	22241821R2	WM8716EDS
Q606	22241872R2	93LC46BT/SN,MAC address
Q607	22241863R3	EP7312-CV, MM microprocessor
Q609	22241161R2	TC7W14FU
Q610	22241159R2	TC7S02FU
Q616	22241867R3	CS8900A-CQ3,Ethernet controller
Q618	22241161R2	TC7W14FU
	Diodes	
D601	223234R2 or	1SS352 or
D604,D605	223269R2	1SS355
D603	225385R2	SEC1201C
	Coils	
L601	230949R2	BLM21P221SG
L603	3030048R2	NFE31PT471F1E9
L605,L606	230949R2	BLM21P221SG
L607	231237K470R2	NCH-1479
R639,R640	230958R1	BK1608LM182-T
	Oscillators	
X601	3010374R2	DSO-751SV, Crystal
X602	3010371R2	DSX630G, Crystal
X603	3010372R2	SM-26F, Crystal
X604	3010373R2	SMD-49, Crystal

CAUTION: Replacement for transistor of mark *, if necessary must be made from the same beta group (H_{FE}) as the original type.

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.

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Note: <D>: 120V model only <A>: Australian model only

CIRCUIT NO.	PART NO.	DESCRIPTION
	Capacitors	
C602,C614	395530477R2	4.7uF,10V, Tantal
C615,C637	395521017R2	100uF,6.3V, Tantal
C638	356721019R2	100uF,6.3V, Elect., chip
C640	393322217	220uF,6.3V, Elect.
C641	374721044	0.1uF+/-5%,50V,Plastic
C645,C647	356721019R2	100uF,6.3V, Elect., chip
C649	393322217	220uF,6.3V, Elect.
C650	374721044	0.1uF+/-5%,50V,Plastic
C679	395521017R2	100uF,6.3V, Tantal
C693	356721019R2	100uF,6.3V, Elect., chip
	Sockets	
P601	25052724	NSCT-8P2620,LAN
P603A	25052707R2	NSCT-6P2603
P604B	25051238	NSCT-13P1028
	Plugs	
P602B	25055964R2	NPLG-4P917
P607B	25055965R2	NPLG-5P918
	Cushion	
Q605A	28141445	(DAC)

CAUTION: Replacement for transistor of mark *, if necessary must be made from the same beta group (H_{FE}) as the original type.

NOTE: THE COMPONENTS IDENTIFIED BY MARK ⚠ ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PART NUMBER SPECIFIED.